

LAND ECONOMICS

a quarterly journal of

PLANNING, HOUSING & PUBLIC UTILITIES

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**Elements of Instability in the Current Japanese
Land Tenure System**

John D. Eyre

**Rises and Declines of American Urban
Centers During the 1940's**

Albert G. Ballert

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for Motor Transport**

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Results of Collectivization of Estonian Agriculture

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AMERICAN ECONOMIC REVIEW

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Elements of Instability in the Current Japanese Land Tenure System[†]

By JOHN D. EYRE*

FEW of the many attempts at corrective surgery on Japanese society during six years of Allied occupation were so vigorously implemented, and so heralded for their purported success, as the measures known collectively as the Land Reform Program. Claims of impressive advances in the redistribution of cultivated land have been quoted freely of late in this country as illustration of what sound planning and a public desire for change can achieve in a situation where uneconomic tenure arrangements exist. In the words of the official SCAP report on land reform, its accomplish-

ments "mark the end of the feudal land tenancy system of Japan, an economically unsound tenure arrangement which has existed since the Meiji Restoration in 1868."¹ As yet, however, few attempts have been made to measure the impact of the land reform program on the rural base and to appraise its permanency.² Public statements are confined to general consideration of the legal content of the reform laws, means by which the laws were applied, and statistical evidence of the replacement of landlords by small landholders.³

[†] Presented as a paper at the fourth annual meeting of the Far Eastern Association at Boston, April 1-3, 1952.

* Department of Geography, University of Washington,

¹ Laurence I. Hewes, Jr., *Japanese Land Reform Program*. General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section Report 127 (Tokyo, 1950), p. 7.

² The most noteworthy attempt at measurement of the effect of the land reform program at the village level is Arthur F. Raper and others, *The Japanese Village in Transition*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section Report 136 (Tokyo, 1950). Despite the speed with which data were collected and the slender sample on which generalizations were based, this study affords some penetrating insights into the inner workings of rural Japan in 1947-48. Further pertinent observations are given in Wolf I. Ladejinsky, "Land Reform Progress in Japan," *Foreign Agriculture*, February 1949, pp. 38-41.

³ Laurence I. Hewes, Jr., *op. cit.*, is the most comprehensive report in English. A far more exhaustive report containing a wealth of statistical data has been published in Japanese, Ministry of Agriculture and Forestry, *Nochi Kaikaku Temmatsu Gaiyo* (An Outline of Details of the Agricultural Land Reform) (Tokyo: 1951). A copy of this important compilation is now in the library of the Far Eastern Institute, University of Washington. See also, Andrew J. Grad, "Land Reform in Japan," *Pacific Affairs*, June 1948, pp. 115-35; Laurence I. Hewes, Jr., "On the Current Readjustment of Land Tenure in Japan," *Land Economics*, August 1949, pp. 246-59; *Agricultural Programs in Japan 1945-51*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section Report 148 (Tokyo: 1951), pp. 97-110; and United Nations, *Land Reform: Defects in Agrarian Structure as Obstacles to Economic Development* (New York: 1951), pp. 54-55. A wealth of information pertinent to the land reform program and the Japanese agricultural situation in general is available in the official publications listed in *Agricultural Programs in Japan 1945-51, op. cit.*, pp. 130-33.

This paper proposes to demonstrate that the forces which gave rise to the pre-reform land tenure system and all its shortcomings are still firmly entrenched in rural Japan, although modified in varying degree by postwar reforms. The landlord class has managed to survive in somewhat weakened form. With it are strong remnants of traditional landlord-tenant relations oriented to the principle of patronage in return for servitude. Such claims are based on personal observations in Japanese farm villages during 1950-51 in the Inland Sea Region.⁴ Findings there have been supplemented by reconnaissance trips through other regions of Japan, and by recent Japanese periodical articles. The facts to be presented should not be construed as conclusive evidence that the land reform program has fallen short of its long-range objectives, but as glimpses into some of the elements of instability that can well threaten the farm sector in the future.

I

The land reform law was passed in October 1946 by a Diet that did not share the full enthusiasm of the program's American architects. It brought into being for the first time legal instruments believed capable of correcting glaring shortcomings of an unsound land tenure system. The meager cultivated land resource coupled with population pressure had enabled the landlord class to make excessive demands on the tenants who tilled almost half of the land under cultivation in Japan. Rentals paid in kind usually averaged 50 percent of the harvest, tenure was insecure and, with the lack of sufficient rural credit outlets, indebtedness at high interest rates prevailed. Landlords benefiting from this arrangement exerted a dominant in-

fluence in all phases of village life. By their selfish practices they were a real obstacle to improved methods of farming, betterment of tenant living standards, and increased food production.⁵

To alleviate these conditions, the land reform law was directed toward more equitable distribution of the cultivated land among all farm classes, and reduction of the socio-economic gap separating tenant, owner-cultivator, and landlord. It enabled former tenants to purchase lands they cultivated at nominal rates, abolished absentee landlordism, limited the amount of cultivated land owned and rented by a household, and guaranteed right of cultivation to those tenants who did not achieve outright purchase of rented plots. Payment in kind was replaced by cash payment at reasonable rates. Such measures, supported by moves to bolster farm credit facilities, establish farm cooperatives, and standardize rentals, were carried out with the hope of increasing substantially the degree of participation of former depressed groups in village life. In effect, the land reform program aimed not only to redistribute cultivated land but to "democratize" rural Japan. As officially stated, the land reform was a "hard-headed program designed to relieve farmers of an oppressive landlord system, a landlord system which had fostered antidemocratic social relations and had been a hindrance to increased agricultural production."⁶

The redistribution of cultivated land was accomplished with remarkable speed and effectiveness considering the scope of the task involved. Shortly after the ambitious target date of December 31, 1948 the purchase of cultivated land by the

⁴ For a survey of rural conditions, see William M. Gilmartin and Wolf I. Ladejinsky, "The Promise of Agrarian Reform in Japan," *Foreign Affairs*, January 1948, pp. 312-24.

⁵ Laurence I. Hewes, Jr., *Japanese Land Reform Program*, *op. cit.*, p. 93. Also quoted by Isadore Lubin in *Land Reform—A World Challenge*, U. S. Department of State, Washington, D. C., 1952, p. 37.

⁶ Field research with the University of Michigan Center for Japanese Studies, made possible by a Social Science Research Council World Area Training Fellowship.

government and its resale to tenants was concluded, although actual registration of the transfers continued into 1951. Within four years the Japanese government and its locally-elected representatives handled some 30,000,000 land transfers, each involving a separate purchase and resale transaction. Measured in terms of men and land the results are even more impressive. Some 3,000,000 farm households, well over half of Japan's total, purchased cultivated land. Tenant-operated properties shrank from 46 percent to 12 percent of the total cultivated land, and the owner class zoomed to 70 percent of all cultivators in contrast to the pre-reform figure of 36 percent. The 12 percent of the farm households still in tenant status were given legal protection from further exploitation by landlords.⁷

This achievement was a tribute to the splendid cooperation of the Japanese government and people. One wonders, however, how much of the observable success of the land reform program was due to the presence of an occupying military force whose stamp is obvious in major Japanese policy decisions. It is true that the Japanese desired, and had outlined, land reform legislation prior to the end of the war, but the most stringent elements of the present laws were pushed through by SCAP over Japanese protests. In effect, the Japanese government implemented measures under Allied pressure that probably would not have been initiated under national sovereignty. This fact in turn leads to speculation concerning the future of the current land tenure system. Has there been sufficient rejection of traditional patterns of thought and action in rural Japan and the substitution of new values during the postwar years to guarantee any prospects of long-range stability to the new tenure arrangements? It is equally pertinent

to ask whether the current system, representing only one facet of the entire social structure, can retain its present form and operate as ordained by law when other societal sectors exhibit their essential prewar flavor with some modification at American hands.

Answers to these questions are not easy despite the impressive depth of statistical data compiled at local and national levels. Particularly elusive is measurement of the discrepancy between the legal goal of economic and spiritual emancipation of the Japanese tenant and actual changes effected in the rural areas. Intangibles such as the individual's reaction to his new status, the nature and effect of landlord resistance, and the amount of change in rural class structure defy quantitative analysis at this moment. Only after the passage of a more substantial period of time will they congeal into comprehensible trends. In order to evaluate the impact of the land reform program on rural Japan and to pass judgment on the possible future stability of the new tenure system, however, the present affords an unexcelled vantage point. Japan now stands at mid-passage between the rebuilding years under Allied control and the first steps of unfettered national sovereignty. In terms of this study it represents the interim between the completion of a series of ambitious social reforms by direction of the occupying powers and the time when they will be put to the acid test of compatibility with Japanese desires.

II

The land reform program did not attempt to dodge reality and eradicate landlordism completely. The objective was to reduce it to a relatively minor but well-controlled position in the farm communities. Absentee landlords were stripped of all their cultivated land

⁷ Hewes, *op. cit.*, p. 7.

holdings, while resident landlords could retain only a maximum of 2.45 acres of farmland rented to tenants. Rentals must be paid in cash at a fair fixed price; with the inflation of recent years rents have been as low as 5 percent of the value of the harvest. To effect a more equitable distribution of cultivated land among the more than 6,000,000 Japanese farm families, no household can own more than 7.5 acres in Old Japan and 30 acres in Hokkaido.⁸ If observed, the fact that these legal restrictions exist does not mean that the land reform program has succeeded in dislodging the landlord as a principal control element in rural Japan. Before turning to evidence of this fact, and to show how it has come about, it might be well to consider briefly the two classes of landlords which together included one-fourth of all farm households prior to 1946.

The large landlord controlling 25 acres or more was never common in Japan. In 1940 there were only 45,000 of them, owning about 15 percent of the total cultivated land. Only a small number were super-landlords who owned in excess of 200 acres. Although scattered all over the country, they were concentrated noticeably in Hokkaido except in specified instances where management is satisfactory, and the Hokuriku region of central western Honshu, in the plains facing the Sea of Japan. In the latter location, Niigata prefecture long held the reputation as a stronghold of landlordism stemming in main from the prominence of landowners in large-scale reclamation projects during the past century. Owners of large acreage of cultivated land were generally absentee landlords who confined their residence and business operations to the cities

instead of the small farm communities. Actual contacts with tenants were rare, and most of the handling of their rented lands was left to resident managers. Dispossessing the absentee landlords and selling their cultivated land to tenants was a relatively easy matter.⁹

For the degree of influence wielded in the farm villages it was the "molecular" landlord holding less than 25 acres of cultivated land on whom attention need be centered. Members of this class, usually residents in the farm communities where their scattered holdings were located, stood to lose most by the land redistribution program. Unlike the large landlords with their sizeable outside economic interests, they were dependent upon the fees extracted from tenants who tilled their fields. The small landlords controlled 55 percent of all cultivated land in Japan before 1946 and were the main element to oppose the land reform program. It was this group, then, representing 90 percent of the former landlord class, whose influence remains so strong in rural Japan. By the same token, they are the ones whose strength must be kept in check if the current land tenure system is to be preserved wholly or in part.

A favorable medium persists in Japanese farming districts for the traditional patterns of class and status to flourish with negligible modification. In contrast to the cities, where responses to western technology and ideas have been relatively profound, farm village life retains much of its feudalistic aura.¹⁰ The con-

⁸ For a case study of the Homma family, one of the super-landlords of Yamagata prefecture, see Wolf I. Ladejinsky, "Landlord vs. Tenant in Japan," *Foreign Agriculture*, June 1947, pp. 83-88. Additional grassroots studies in Hokkaido and Fukuoka prefecture by the same author have been published under the same title in *Foreign Agriculture*, August-September 1947, pp. 121-28.

¹⁰ An excellent discussion of the conservative nature of rural affairs is Robert E. Ward, "The Socio-Political Role of the Buraku (Hamlet) in Japan," *American Political Science Review*, December 1951, pp. 1025-40.

⁹ Allowances were made for the relative productivity of wide areas, not for individual holdings. Within Old Japan, maximum holdings range in size from three to seven and one-half acres. There is a convenient regional listing of maximum holdings in Hewes, *op. cit.*, p. 114.

cept of *giri*, or personal obligation, for example, remains strongest in rural areas, especially in those most distant from the changing urban centers. As a result, any farmer under obligation to landlord, neighbor or official is hard put to act and vote without bias despite legal mandates to the contrary. Faced with the bitter struggle to secure enough food to maintain life from minute plots of land, and hindered by a lack of mobility and bargaining power, the impoverished tenant and small owner-cultivator is in no position to act without deference to customary forces of control. Poor farmers must hire out to others in better economic circumstances as day labor, or borrow money from them. In either case they are obligated to their benefactors.

Fear of future reprisal for actions taken in accordance with the land reform law but in opposition to established socioeconomic procedures is another compromising element in the attitude of tenants and former tenants. A concrete illustration is provided in a recent Japanese periodical article.¹¹ Discussing the current situation in a mountain village of Nagano prefecture, known for its high pre-reform tenancy rate, the author reports a disturbing lack of change in landlord-tenant relations since the land reform has been in effect. At election time political leaders manage to find out for whom each farmer voted. If the farmer has the misfortune to cast his ballot for the wrong candidate there is always the threat that his rice delivery quota will be raised, land taxes increased, or other action taken through official channels to make him repent his error. An isolated example of this nature does not offer conclusive evidence that it is nationally representative. However, reports of similar conditions keep drifting

in from all over the country, especially from the backward mountain districts.

III

Evidence of continuing landlord influence in rural Japan is seen in the composition and decisions of the land commission (*nochi iinkai*) set up to administer the land reform at the village level. Conceived as one of the strongest links in the over-all land reform program, the commissions also had the express and implied responsibility of nurturing a new sense of independent participation in local affairs by tenants and small owner-cultivators. They were given the back-breaking job of handling the actual purchase and resale of cultivated land in the villages. This meant determining what lands were to be purchased and to whom they should be sold. A present and future function of the commissions is to act on all cultivated land transfers in areas under their jurisdiction and to see that the land laws in general are upheld. Membership in these extremely important organs consists of two landlords, two tenants, and six owner-cultivators, elected by popular ballot.

Official SCAP reports have stressed the leadership experience of the non-landlord elements serving on the land commissions as evidence of accelerated democratic action by formerly stifled groups. While such claims of healthy participation over wide areas are no doubt true, a disturbing number of contradictory reports have come in. A survey by the government in 1948 when the redistribution process was well on the way to completion disclosed that the reform law, hurriedly applied to expedite cultivated land transfers,¹² was in general poorly

¹¹ Kenichi Kikuchi, "Nomin no Uso to Makoto (Agrarian Untruths and Truths)," *Chuo Koron*, August 1951, pp. 74-83.

¹² Toshio Furushima, "Jinushi no Kosakuchi Toriage to Nochi Kaikaku no Genkai (The Confiscation of Tenant Properties by Landlords and Limitations of the Agricultural Land Reform)," *Toyo Bunka*, November 1950, p. 16.

understood by the very groups it was directed to serve. Examples were found in every part of Japan showing that well-established, strong local leaders representing conservative interests were elected, commonly without opposition. Even more significant, there were many cases where land commission representatives were selected without any voting at all due to the apathy of the farmer electorate. The failure of farmers to participate in this critical phase of the land reform was attributed to their ignorance of the meaning and procedures of the new legislation, and to their customary distrust of legal processes. Too frequently the result has been the maintenance of the village socio-economic status quo with but slight modification instead of a quickening of independent action on the part of the tenant and former tenant groups.

The net result is that land commissions often have a disproportionate share of members favorable to landlord interests. The tenant is not eager to continue the relationship unchanged, but he feels he must bow to the realities of the situation. He and his descendants must continue to live in the same tight social structure of the village as before the land reform, and he must protect and guarantee the future stability of that position, low though his status may be. Further conservative tendencies in the land commissions are shown by the average age of component members. Middle-aged and older men predominate, while younger men who stand to gain most from participation, and who could take a more enlightened stand on various issues, are precluded by the favored position accorded the family head. One account of land commission activities points out that a potentially influential group, owner-

cultivators, have remained aloof from many proceedings because of their neutral position in the cultivated land redistribution.¹³

Significant regional variations in the pre-reform pattern of Japanese tenancy lend a complicating note to generalizations concerning the current status of the land tenure arrangements and general conditions in the farm villages.¹⁴ Regional differences stemmed usually from distinctive local historical developments and environmental conditions affecting the scope of agricultural production. The northern frontier zone, underdeveloped Hokkaido and the Tohoku region, had the highest tenancy rates, followed by the Hokuriku, Kanto, and Kinki regions, and northern Kyushu. Tenancy was less prevalent in southern Kyushu, Shikoku, with the exception of Kagawa prefecture, and the Tokai region. Even within these regions there were striking variations in component prefectures and their sub-divisions. From all of the regions, however, come reports that land commissions have acted all too often upon "the principles of harmony and compromise" to promote peace within the villages. Such evidence reinforces the feeling that the objectives of many land commissions have been compromised badly. In addition to their holding power shown in the land commissions, many landlords have maintained their dominant position in rural Japan by a variety of specific ways.

¹³ Shinrokuro Yamaguchi, *Some Aspects of Agrarian Reform in Japan* (Tokyo: Japan Institute of Pacific Studies, 1948), p. 19.

¹⁴ Seiyei Wakukawa provides a sound discussion of the characteristics and historical development of tenancy in Japan, "The Japanese Farm-Tenancy System," *Japan's Prospects*, ed. by Douglas G. Haring (Cambridge: Harvard University Press, 1946), pp. 115-73. Some of the pre-reform tenancy data is presented in map form in Glenn T. Trewartha, "Land Reform and Land Reclamation in Japan," *Geographical Review*, July 1950, pp. 376-96. In addition, see Wolf I. Ladejinsky, *Farm Tenancy in Japan*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section Report 79 (Tokyo, 1947).

Within the legal cultivated land retention limits, landlords have kept the best land, and have sold land of secondary value to former tenants. This can become a critical issue in a land-poor country like Japan. In the backward, conservative Tohoku region of northern Honshu, a monopoly over the best rice seedbed sites alone enables some landlords to exert undue influence in local affairs. Former large landowners, as well as some smaller landlords, manipulate forest holdings and urban investments to offset what they hope is only momentary loss of their cultivated land. In addition, they wield an economic club of no mean proportions in their forest and water management rights, which have been subject to negligible legal control. To sidestep restrictions on the size of cultivated land holdings per household, landlords have effected a nominal subdivision of property among their relatives. Actual control is retained by the family head, and the properties are worked to mutual profit as before. Some landlords, through manipulation, have avoided registration of small parcels of paddy or dry fields that bring in tax-free income. Reports indicate, however, that the practice of concealing ownership is not confined to landlords. To any poor landowner food from a small piece of tax-free land may mean the difference between starvation and survival.

Landlords have been very vocal in charging that the present land tenure system does not recognize individual initiative and ability, relative land productivity, and size of family in fixing the maximum cultivated land holding per farm household. Also, they have not been hesitant to offer overt challenge to the land reform laws. During the first two years of the reform program when land transfers were under way, a number

of court cases were instituted to test the constitutionality of the new legislation. Failing there, the landlords are applying more telling pressures within the framework of the law to reinforce their position in rural Japan. To date the most effective has been to retake rented properties from cultivating tenants by disputes and appeals reviewed by the land commissions. Success in many such moves has enabled landlords to increase their cultivated acreage to the limit imposed by law even though it entails tenant distress.

The total number of landlord attempts to regain tenant properties has not been tabulated. Government estimates in 1949 put formal transfers at approximately 53,000 acres, or 1.2 percent of the cultivated land purchased by the government for redistribution. However, government officials felt that an additional 196,000 acres were transferred to landlord use without public notice, frequently by tenant intimidation.¹⁵ The average size of plots involved in transactions of this type is small, from one-fourth to three-fourths of an acre. Though small, this acreage is significant when compared to the national average of 2.5 acres of cultivated land per farm household. There are marked regional differences in the effectiveness of landlord resistance of this type. The regaining of tenant properties has been outstanding in the prefectures of Hiroshima, Okayama, Yamaguchi, Nagano, Kochi, Saga, Shimane, Ishikawa, Tottori, and Kagawa. The result is that the landlord, by employing legal and covert means, continues to better his economic base.

An element of concern in all quarters has been the low rental and sale-price ceilings set by the government in 1946. They did not allow for the severe post-war inflation which soon made them out

¹⁵ Furushima, *op. cit.*, p. 22.

of line with the general price structure. Rentals are often lower than taxes for cultivated land. This fact has given rise to deep-set landlord resentment, counter-balanced only in part by tenant glee over the chance to ride a good thing while it lasts. Tenants purchasing land were not so pleased, feeling that they were getting too generous a bargain for which future payment of some sort would be exacted.

IV

In addition to the foregoing difficulties of controlling local administration, the land reform law itself failed to include forest lands within its scope. Reasons for their omission have not been stated, but in size and complexity the forested areas were too imposing a burden for land commissions already occupied with the transfer of cultivated land. The law has left intact a sector vital to the well-being of Japan's agricultural economy, one in which landlord controls remain unchallenged. Any realistic policy for maintaining the present land tenure arrangements in cultivated areas need incorporate provisions for modification of forest holdings. The Japanese give no hint of enthusiasm for such a move.

Unlike in most western countries, there is a close relationship between field and forest in the Japanese farm economy. The farmer obtains from his woodlot items essential to farm life: firewood, charcoal and forest sweepings for cooking and heating, pasturage for his work animal, and compost materials to enrich the overworked paddies. In most mountainous areas traditional rights to use designated forest plots accompany cultivated land whenever it is sold or rented.¹⁶ By monopolizing forest ownership, landlords have a lucrative source of income,

and the chance to coerce tenants desirous of more independent action. Tenant protective measures outlined by the land commissions are in many cases ineffectual. Landlord control of Japan's forested uplands is not an isolated local phenomenon, but is a problem of national scope. Conditions are especially bad in the Sanin region, Nagano prefecture in central Honshu, and in most parts of the northern frontier zone.

Isolated from the main centers of Japanese life, the farmer-forester has few opportunities for livelihood beyond small-scale farming on poor soils yielding meager crops, and charcoal making. In the most profitable sideline of mountain districts, the rearing of cows for sale to lowland markets, farmers must face the problem of getting access to adequate pasturage. Thus, they are vulnerable to conditions imposed by forest owners. Many poverty-ridden tenants are forced to seek employment as forest laborers at low wages during the winter slack season; other activities do not provide the bare necessities of life. Even the small owner-cultivators, too poor to buy chemical fertilizer, must turn to forest landlords for compost collection rights.

In the Sanin region, among the most backward parts of western Japan, the harsh economic conditions of mountain life have fostered a unique form of tenancy resembling share cropping. Land, house, implements, seed and fertilizer are supplied by the landlord. In return for his labor, the tenant receives a slender share of the harvest. Such arrangements are still deeply rooted in areas where they have long been the rule. Japanese observers have reported on conditions in this area, parts of the Tohoku region, the Oki Islands, and the Kiso River Valley of Nagano prefec-

¹⁶ A map illustrating the relationship between plots of cultivated land and forest land is shown in Arthur F. Raper and other, *The Japanese Village in Transition*, op. cit., p. 168.

¹⁷ To Redistrib
Economic
¹⁸ Fu

ture.¹⁷ In each locality feudal relationships between landlord and tenant remain unchanged, protection and security in return for service and deference.

The land reform did not strive to remedy the fundamental agrarian problems of fragmentation of holdings and meagre farm incomes produced by the pressure of too many people on a limited land resource. Yet, by its very enactment it has aggravated the situation. Small, uneconomic plots of cultivated land are more numerous than ever, with high yields per unit achieved through reckless use of manpower. Urban opportunities have not answered the dilemma of the dense farm population. As extra hands are drawn into commerce and industry in the cities their places are filled, and augmented, by the high rural birth rate. The result is a steadily increasing population which outstrips any increase in food production by the use of reclaimed cultivated land and scientific farming. Consolidation of typically scattered plots into more economic and more easily worked units has been accomplished in relatively few localities.

The grim facts of Japanese farm holdings are intensified by a slight post-war decline in cultivated land to 15,000,000 acres in 1949, and an increase of 378,771 farm families to a total of 6,013,000 for the nation.¹⁸ Only 67,000 of the new farm households were settlers on newly reclaimed land. The remainder were offshoots from farm families, and former city dwellers. The land reform meant that all households were given the chance to secure a more equitable share of cultivated land. On the other hand, it has increased substantially the number of households operating less than 1.25 acres of cultivated land.

As already indicated, one of the objectives of the land reform program was to install former tenants as freeholders in a healthy socio-economic environment. Now it is a question of how long many former tenants can hold out financially, tilling their small holdings before returning to tenancy as the only escape. Economic pressures accrue from strict government crop requisitions, heavy taxation, and high cost of fertilizer and implements. Caught in the post-war inflationary spiral, tenants and small owner-cultivators alike are in a precarious position. Former tenants find themselves entangled in the complexities of a money economy, paying in cash transactions formerly conducted in kind. A slender line, if any, separates their present status from that of tenant in pre-reform days.

Occupation officials hoped to fortify the economic position of tenants and owner-cultivators by the establishment of farm cooperatives. The major function of the cooperatives includes farm credit, staple food storage, processing of farm produce, and a wide range of other services.¹⁹ Farmer participation has been excellent in terms of numbers in keeping with the customary Japanese emphasis on organization to achieve group ends. However, there still lingers in the memory of the farmers centralized prewar and wartime controls over similar farm cooperatives to the benefit of government, landlords and other business interests. Farmers persist in their distrust of government and feel that the new cooperatives are images of the old imposed under a new label. In this connection it should be pointed out that the post-war cooperatives are government established, and did not spring from spontaneous farm movements. Mixed

¹⁷ Toyoji Tanaka, "Noshi Kaiho to Sanson Keizai (The Redistribution of Cultivated Land and Mountain Village Economy)," *Jimibun Chiri*, July 1950, pp. 12-24.

¹⁸ Furushima, *op. cit.*, p. 15.

¹⁹ John L. Cooper, *Development of Agricultural Cooperatives in Japan*, General Headquarters Supreme Commander for the Allied Powers, Natural Resources Section Preliminary Study 36 (Tokyo: 1950), p. 4.

feelings among farmers are evident when cooperatives come under discussion. They are appreciated for their banking and credit facilities, and their steady markets for farm products, but their impersonal operation and high overhead are eyed with displeasure. Credit facilities still fall far short of rural needs. How effectively the cooperatives benefit the tenant and small owner-cultivators will depend upon the degree of genuine support received from both farmers and government in the future.

VI

The foregoing evidence appears to indicate that the Japanese land reform program has not affected the rural conditions as intended by its drafters. Forces that gave rise to earlier land tenure evils still prevail in rural Japan. Undoubtedly a remarkable redistribution of cultivated land has been achieved, wiping out the absentee and large landowning classes. Cultivated land has been distributed more equally among an increased number of small owner-cultivators, resulting in a sharp decline in tenancy. Without question, these and other innovations will stimulate some degree of change in the farm sector, though whether the change will be along "democratic" lines remains to be seen. The retention of only some of the elements of the present land tenure system, such as payments in cash

instead of in kind, will represent an advance over past conditions.

Only the determined efforts of a national government sufficiently interested in rural welfare to protect the gains of the past few years will keep resurgent landlordism in check. An apathetic governmental attitude toward land tenure problems, and the failure of farmers to muster effective vocal representation in the Diet, will lead inevitably to repetition of pre-reform tenancy evils. In the eyes of this writer, current trends do not engender optimism.²⁰ To echo the conclusions of a qualified authority stated in 1948, "it is impossible for me to be too optimistic about the future stability of the agricultural economy of Japan. I hold some reservations as to the Japanese government's attitude toward agriculture . . . Some forward-looking progressive public officials in the government understand the best interests of agriculture as it relates to Japan's future. Their efforts, however, are too often blocked by the inertia and shortsightedness of bureaucrats more interested in their own political position than in the ultimate welfare of Japan."²¹

²⁰ For a more hopeful note, see Wolf I. Ladejinsky, "Japan's Land Reform," *Foreign Agriculture*, September, 1951, pp. 187-89.

²¹ Statement by Raymond H. Davis, Chief, Agricultural Section, Natural Resources Section, quoted in Darrell Berrigan and Wolf I. Ladejinsky, "Japan's Communists Lose A Battle," *Saturday Evening Post*, January 8, 1949, p. 102.

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The Rises and Declines of American Urban Centers During the 1940's

By ALBERT G. BALLERT*

SOME aspects of the recent trends in process in the urban centers of our country are subject to analysis now that census figures and other data for the last decade are available. The development which has taken place in various sections of the nation has been markedly different. Before noting these variances, however, a few features of the national situation warrant attention.

There are 997 of the 1,077 urban places having populations over 10,000 in the 1940 Census which were also included in the 1950 enumeration.¹ These 997 communities had an aggregate population of 61,186,209 or 46.5% of the country's total in 1940. It is both interesting and significant that this same group of urban places held a total of 70,759,576 persons in 1950, according to the final census figures, and that this was 47.0% of the total population of the United States.² The growth of the selected urban places by about 9,573,000 persons or 15.6% was, therefore, but little greater than the rate of increase for the nation (14.4%), but it was, of course, a major factor in that over-all growth. If the 1,262 places of 10,000 or more persons included in the 1950 Census are used as a basis for tabulation, the cumulative population then becomes 74,345,885 or 49.3% of the nation's total. These

comparisons indicate that it has been the addition to the list of urban places over 10,000 population which has brought about the increasing proportion of the country's population in places of such size. Growing urbanization has accounted for much of the rise in number of places over 10,000, but another and important factor has aided in this expansion. It is the inclusion of college students for the first time in the population of the communities where they attend school. In Ohio, for example, this raised at least five towns into the 10,000 class.³ The new census procedure also is reflected in the increase in larger university communities such as: Ann Arbor, Mich. (62%); Champaign-Urbana, Ill. (67%); Columbia, Mo. (74%); and Madison, Wis. (42%). Since many of the students are from urban areas, this factor will be less significant with respect to over-all urban population gain as it is merely a change in location for such persons. Another consideration in the 1950 increase in places of 10,000 or more is the inclusion of 28 unincorporated places with an aggregate population of about 438,000 persons. The largest such centers were East Bakersfield, California (38,000) and Oak Ridge, Tennessee (30,000).

The rates of population change between 1940 and 1950 in the nearly 1,000 communities of the United States which had at least 10,000 persons in 1940 provide a source for noting more specifically some of the general facts known about recent urban development in

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¹ The 1940 Census included 80 places under a special rule, principally towns in the southern New England states and townships in New Jersey and Pennsylvania, which were not included in the 1950 list of urban places. The 1940 and 1950 final figures for all places of 1,000 or more persons appear in the Advance Reports of the U. S. Bureau of the Census, Series PC-8.

² The 1950 population residing in continental United States was 150,697,361 (U. S. Bureau of the Census, 1950 Census of Population, Series P-25, No. 48).

³ The towns are: Athens (Ohio University), Berea (Baldwin Wallace), Bowling Green (Bowling Green State), Delaware (Ohio Wesleyan), and Kent (Kent State).

various sections of the nation. Only cities of 10,000 or more have been included in this study in order to eliminate the small urban places—2,500 to 10,000—where high percentage changes can be attained somewhat more easily.⁴ The afore-mentioned college enrollment, while sharply affecting the gains of a number of centers included in this survey, generally had a much greater effect in the numerous smaller places.

The percentage changes in all 997 urban places which had 10,000 or more

persons in 1940 are considered in Table I. They are subdivided into five groups based on rate of population change between 1940 and 1950. When shown by geographic division of the country, these data take on added meaning. A majority of the urban places (610) had moderate gains, but about two-fifths (387) either had increases of 25% or more or declined in population during the 1940's. These centers at the ends of the growth scale reflect most vividly the urban trends in different parts of the nation. To show this more clearly, these urban places have been separated into four size-groups in Table I. The geographic distribution of the 267 places having major gains and the 120 which lost population is shown in the accompanying map.

⁴In 1950 the urban portion of the country's population (64%) received a new impetus by the inclusion of all persons within the 157 newly-defined urbanized areas. In general, such areas are made up of one or more cities of 50,000 persons or more and the surrounding closely-settled territory. Based on the 1940 definition of "urban," the urban population at the time of the last census represented 59% of the nation's total instead of the above 64%.

TABLE I—URBAN PLACES OVER 10,000 POPULATION IN 1940 AND 1950, BY GEOGRAPHIC DIVISION AND PERCENTAGE CHANGE DURING THE DECADE

(Note: Places having a gain of 25% or more and those with losses are divided into size groups based on 1940 population as follows: (A) over 100,000; (B) 50-100,000; (C) 25-50,000; (D) 10-25,000.)

| Area | 1950 Total | 1940 Total | Gain of 25% or more | | | | | Gain 14.0- 24.9% | Gain 3.0- 13.9% | Gain 0.0- 2.9% | Loss | | | | |
|-------------------------|---------------|---------------|---------------------|----|----|----|----|------------------------|-----------------------|----------------------|-------|---|----|----|----|
| | | | Total | A | B | C | D | | | | Total | A | B | C | D |
| United States..... | 1262 | 997 | 267 | 19 | 28 | 42 | 78 | 190 | 337 | 89 | 120 | 9 | 14 | 17 | 80 |
| New England..... | 99 | 90 | 4 | 0 | 0 | 2 | 2 | 11 | 47 | 13 | 15 | 4 | 1 | 2 | 8 |
| Middle Atlantic..... | 239 | 219 | 12 | 0 | 0 | 1 | 11 | 30 | 77 | 38 | 62 | 4 | 8 | 6 | 44 |
| East North Central..... | 280 | 229 | 28 | 0 | 4 | 2 | 22 | 58 | 100 | 19 | 24 | 0 | 3 | 5 | 16 |
| West North Central..... | 119 | 97 | 19 | 1 | 1 | 1 | 16 | 23 | 40 | 7 | 8 | 0 | 0 | 0 | 8 |
| South Atlantic..... | 145 | 110 | 48 | 3 | 6 | 7 | 32 | 20 | 34 | 3 | 5 | 1 | 2 | 2 | 0 |
| East South Central..... | 66 | 51 | 22 | 1 | 3 | 2 | 16 | 12 | 13 | 2 | 2 | 0 | 0 | 1 | 1 |
| West South Central..... | 123 | 84 | 53 | 5 | 7 | 11 | 30 | 14 | 13 | 3 | 1 | 0 | 0 | 0 | 1 |
| Mountain..... | 48 | 37 | 23 | 1 | 1 | 4 | 17 | 10 | 1 | 1 | 2 | 0 | 0 | 1 | 1 |
| Pacific..... | 143 | 80 | 58 | 8 | 6 | 12 | 32 | 12 | 6 | 3 | 1 | 0 | 0 | 0 | 1 |

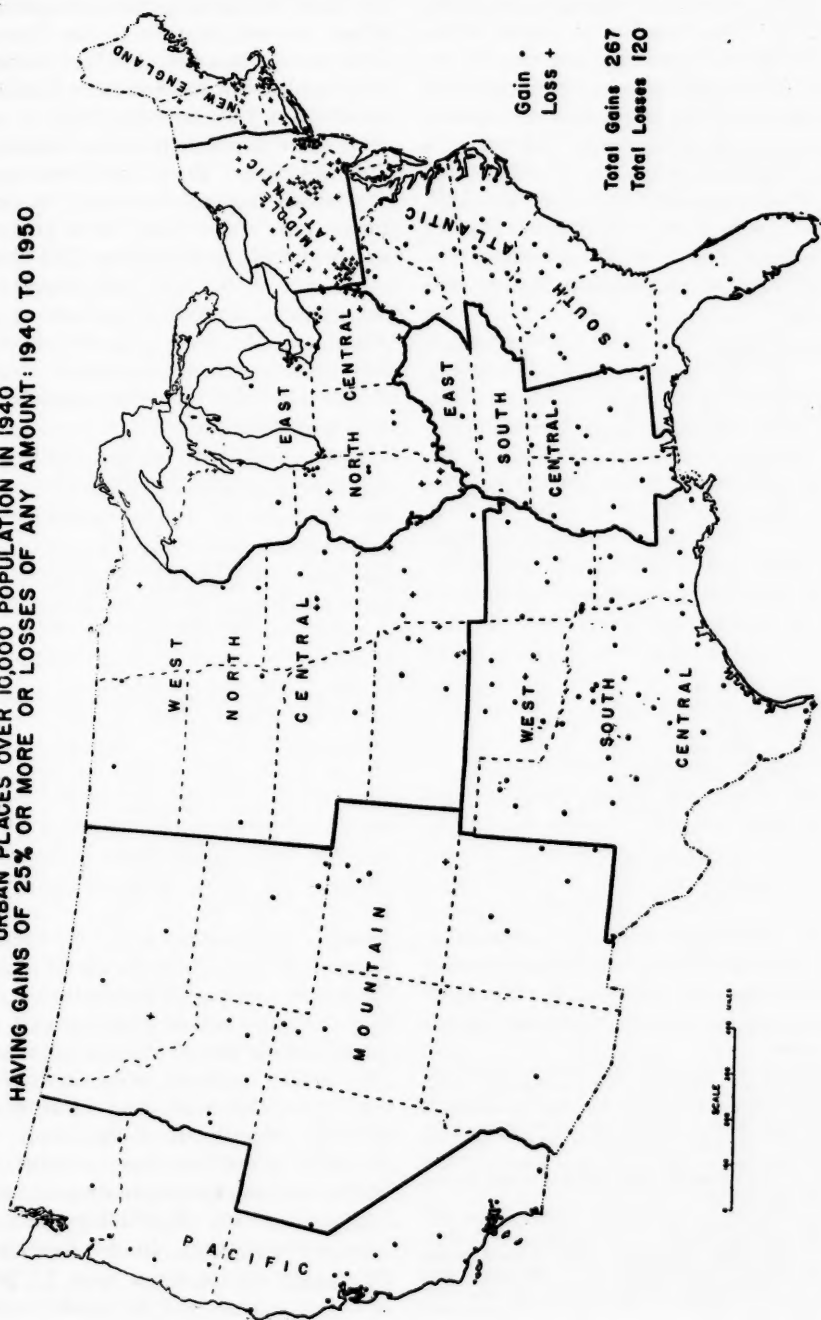
¹ According to the 1940 Census there were 1,077 urban places over 10,000, but this includes a number of places under a special rule in 1940 which were not included in 1950.

Many reports and articles recently have called attention to the growth of cities in the South, and Table I and the map support this recognition. In the South Atlantic, East South Central, and West South Central states one-half (123 out of 245) of the urban places of 10,000 or more persons had increases of 25% or more during the past decade. This dynamic group represented nearly half (46%) of the country's total places of this

size making such substantial gains. With respect to losses, only eight occurred in the South and six of these were along the northern border of the region. The urban population of the South represented 37% of the total in 1940 and, by the same definition, accounted for 44% in 1950. Based on the new urban definition the figure is raised to 49%.

As indicated by the map, the southern centers having a large growth are nearly

URBAN PLACES OVER 10,000 POPULATION IN 1940
HAVING GAINS OF 25% OR MORE OR LOSSES OF ANY AMOUNT: 1940 TO 1950



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all widely-separated, independent communities. The recency of major urban growth in this area explains this condition.⁴ An unusual development has taken place in two West South Central states—Arkansas and Oklahoma. In each, a high proportion of the towns of 10,000 or more have increased by more than 25% in the 1940's (8 out of 9 and 6 out of 21 respectively), but both states have declined in total population during this period.⁵

Annexation has been an important factor in the growth of some centers, particularly in Texas. Each of the "big four"—Dallas, Fort Worth, Houston, and San Antonio—had area increases of 90% or more during the 40's. Data for these cities are included in Table V, and the subject is considered at a later point. While the liberal annexation power given home-rule cities in this state is an important consideration in the urban population growth, gains would, nevertheless, have been large even with less ambitious land acquisitions.⁶

In the Pacific and Mountain states, 81 urban centers of 10,000 or more had gains of at least 25% during the 1940's, while only three lost population. Those having major population increases represented 70% of the total in the size group being considered. Large population growth in the Pacific Coast states during the last decade also led to the large growth of cities. In contrast to the South,

here there has been great development of urban clusters, namely in the Los Angeles and the Bay areas. Over a score of municipalities in the Southern California conurbation increased by 25% or more while there were ten in the San Francisco-Oakland area. Even San Francisco, a city which has not extended its boundaries since 1856 (land area about 47 square miles), increased by 22% during the decade of the 40's. Los Angeles had the greatest numerical growth of any American city with a gain of about 466,000 although, unlike earlier decades, the area of the city was extended by only 2.6 square miles.

Turning from the South and West to the Northeast throws in sharp contrast the variance in urban trends in the different sections of America. The New England and Middle Atlantic states contained 309 or 31% of the urban places of more than 10,000 in 1940. In the ten years which followed, 77 or one-quarter of the total decreased in population. This represented nearly two-thirds (64%) of the nation's total declining urban places of the size under consideration. The principal centers of urban loss, as shown by the map, are: eastern Massachusetts and Rhode Island, the upper Hudson and lower Mohawk valleys, the Jersey section of the New York-New Jersey metropolitan area, northeastern Pennsylvania, and the Pittsburgh-Upper Ohio River area. In Pennsylvania more than half the urban places under consideration (47 out of 92) lost population. The area in the northeastern part of the state coincides with that of anthracite mining. Nearly all of the small communities, as well as those of more than 10,000 persons, lost population in Lackawanna, Luzerne, Northumberland, and Schuylkill counties. In the four-county Pittsburgh metropolitan area 17 places of 10,000 and many of the smaller munici-

⁴ Only one of the 17 nonmetropolitan economic areas (groups of counties) in these two states had any gain in population between 1940 and 1950. For an appraisal of state economic areas, as well as the change in county populations and the effects of migration in the United States see: Henry S. Shryock, Jr., "Redistribution of Population: 1940 to 1950," *Journal of the American Statistical Association*, December 1951, pp. 417-437.

⁶ Home-rule Texas cities may add unincorporated territory by ordinance without consulting the residents of the area to be embraced. Noteworthy articles on Texas annexations by August O. Spain appear in *The Southwestern Social Science Quarterly*, March 1949, pp. 299-301 and June 1949, pp. 18-28.

palities declined. Except for the inclusion of out-of-town university student residents in 1950, Pittsburgh would have had a lower population than in 1940.⁷ One of the centers of urban loss in the Northeast—the New York-New Jersey area—also held most of the places in this section of the country which made major gains. These communities are on Long Island and in the outer portion of the New Jersey section.

The Middle West (East North Central and West North Central states) has the greatest number of urban places over 10,000 population. In 1940 the total of 326 was not much above the Northeast states (309), but by 1950 the figure had increased to 399. A large proportion of the 47 places which increased more than

25% in population between 1940 and 1950 were in the vicinity of four metropolitan centers—Chicago, Cleveland, Detroit, and St. Louis. Also, in more than a dozen of the cities were to be found the campuses of state universities—the explanation for their high rates of gain. The principal areas of urban decline in the Middle West were in southeastern Ohio, southern Illinois, and southeastern Kansas. If smaller communities are included—those of 1,000 or more persons—then areas such as northern Michigan also show a significant population loss, with 18 out of 25 communities having decreases. Hamtramck and Highland Park, completely surrounded by Detroit, each lost about one-tenth in population although the principal city increased 14%.

The highest rates of gain made by cities in each of the four population-size ranges (Table II) were urban centers

⁷ Pittsburgh's ten-year gain was only about 5,100 persons. Major schools located in this city are: Carnegie Tech., the University of Pittsburgh, and Duquesne University. Over one-half the above gain occurred in two census tracts which contain the first two of the institutions.

TABLE II

| Population Range | Urban Center | Population | | |
|-------------------|----------------------------|------------|---------|------------|
| | | 1940 | 1950 | % increase |
| 10- 25,000..... | Richmond, Calif..... | 23,642 | 99,545 | 321.1 |
| 25- 50,000..... | Baton Rouge, La..... | 34,719 | 125,629 | 261.8 |
| 50-100,000..... | Corpus Christi, Texas..... | 57,301 | 108,287 | 89.0 |
| over 100,000..... | San Antonio, Tex..... | 253,854 | 408,442 | 60.9 |

located in the southern and western states. Richmond, an industrial community in the rapidly growing San Francisco Bay region, had the highest rate of increase since 1940 of any urban center over 10,000 in the nation. This community also had the greatest percentage gain in nonwhite population—3,384% (from 408 to more than 14,000 persons).⁸ Baton Rouge was consolidated with East Baton Rouge Parish by vote in 1947, and in the process the area of that city was in-

creased from 5 square miles to about 31 square miles.⁹ Corpus Christi and San Antonio also carried out substantial annexation programs during the 1940's. Important supporting factors for a marked percentage increase in the population of a city are (1) major annexations during the last decade or (2) the acquisi-

⁸ U. S. Bureau of the Census, 1950 Census of Population, Series PC-14, No. 1.

⁹ The total area of East Baton Rouge Parish is 472 square miles, (U. S. Bureau of the Census, *Areas of the United States, 1940*, p. 119), but the identity of the City of Baton Rouge is preserved by making it coextensive with the designated urban area of the parish. For an excellent summary of this development and other consolidations see: Thomas H. Reed, "Progress in Metropolitan Integration," *Public Administration Review*, Winter 1949, pp. 1-10.

tion of extensive undeveloped areas in earlier decades, particularly the "golden twenties."

Among the urban places which declined during the 1940's, three of the four population-size groups were led by Pennsylvania communities (Table III). The fourth, Hamtramck, was mentioned

above as being completely blocked from further area expansion by Detroit. The rate of population loss in Homestead, a suburb of Pittsburgh, is the greatest of any urban place over 10,000 in the United States. Many other satellites of this central city also lost population, but some, apparently the newer residential

TABLE III

| Population Range | Urban Center | Population | | |
|-------------------|-----------------------|------------|---------|------------|
| | | 1940 | 1950 | % decrease |
| 10- 25,000..... | Homestead, Pa..... | 19,041 | 10,046 | -47.2 |
| 25- 50,000..... | Hamtramck, Mich..... | 49,839 | 43,355 | -13.0 |
| 50-100,000..... | Wilkes-Barre, Pa..... | 86,236 | 76,826 | -10.9 |
| over 100,000..... | Scranton, Pa..... | 140,404 | 125,536 | -10.6 |

communities, expanded considerably. Between 1930 and 1940 Homestead decreased 5.5% in population. As in the case of Hamtramck, incorporated areas surround Homestead. Wilkes-Barre and Scranton are both located in the anthracite section of northeastern Pennsylvania and both lost population during the 30's as well as in the 40's. Among the 157 urbanized areas defined by the Bureau of the Census in 1950, Wilkes-Barre had the lowest proportion of the population residing in the central city (28%).¹⁰ In contrast, the above-mentioned cities which had the highest rates of increase for their population size—Baton Rouge, Corpus Christi, and San Antonio—each had from 88 to 91% of the total urbanized area population within their corporate limits.

The 92 cities of the nation which had populations over 100,000 in 1940 have exhibited definite regional variation with respect to rates of growth during the decade that followed. Table IV embodies the basis for this statement.¹¹ Of 30 such New England and Middle

Atlantic cities, for example, not one made population gains of more than 11.8% in the ten years.¹² This is in sharp contrast to the 19 comparable-sized cities in the West South Central, Mountain, and Pacific states where the lowest percentage increase during the decade was 15.3% (New Orleans), and 14 of the 19 cities had increases greater than 25%. The major cities of the South Atlantic and East South Central States had, in general, substantial increases although less spectacular, as a group, than the cities in the southwestern and western states. In the Middle West (North Central states), 20 out of the 27 major cities, three-quarters of the total, grew between 3.0% and 13.9% over the ten-year span. In this area, of the cities having a quarter-million population (shown in parentheses in Table IV), only Columbus, Ohio and Kansas City, Missouri had increases greater than the above range. An appreciable portion of the 22.4% increase for Columbus can be attributed to

1950 see: Reinhold P. Wolff and Frederick H. Bair, Jr., "Are We Reaching City Limits," *Dun's Review*, April 1951, pp. 22 ff.

¹² Erie, Pennsylvania, the city with the highest rate of increase, is a Middle Atlantic city according to Census definition, although it lies along the shore of Lake Erie. This exemplifies the shortcomings which frequently arise in using states as unit for statistical purposes.

¹⁰ For data on the population of urbanized areas see the preliminary count of the Bureau of the Census, Series PC-3, No. 9.

¹¹ For an appraisal of American urban growth based on the population growth of the 106 cities of 100,000 or more in

large enrollment of out-of-town students at Ohio State University. Kansas City was aided by the annexation of about 19 square miles and 13,800 residents in Clay County, north of the Missouri River.

A population factor which played an important role, particularly in many of the northern cities, was the new immigration. This was, in large part, a movement of Negroes from the South. Except for this influx, a number of cities of

TABLE IV—NUMBER OF CITIES OVER 100,000 POPULATION IN 1940 AND 1950, GROUPED BY PERCENTAGE CHANGE DURING THE DECADE

(Note: Cities over 250,000 population appear in parentheses (), and are also included in the totals.)

| Area | No. of Cities 1950 | No. of Cities 1940 | Gain | | | | Loss |
|-------------------------|-----------------------|-----------------------|----------------|----------------|---------------|--------------|-------|
| | | | 25% or more | 14.0- 24.9% | 3.0- 13.9% | 0.0- 2.9% | |
| United States..... | 106 (39) | 92 (37) | 19 (8) | 16 (8) | 37 (15) | 11 (4) | 9 (2) |
| New England..... | 12 (1) | 12 (2) | 0 | 0 | 6 (1) | 2 | 4 (1) |
| Middle Atlantic..... | 19 (7) | 18 (7) | 0 | 0 | 7 (2) | 7 (4) | 4 (1) |
| East North Central..... | 19 (9) | 18 (8) | 0 | 4 (1) | 13 (7) | 1 | 0 |
| West North Central..... | 9 (4) | 9 (4) | 1 | 1 (1) | 7 (3) | 0 | 0 |
| South Atlantic..... | 11 (3) | 10 (3) | 3 | 4 (1) | 2 (2) | 0 | 1 |
| East South Central..... | 8 (3) | 6 (3) | 1 (1) | 2 (2) | 2 | 1 | 0 |
| West South Central..... | 13 (5) | 7 (4) | 5 (3) | 2 (1) | 0 | 0 | 0 |
| Mountain..... | 3 (1) | 2 (1) | 1 (1) | 1 | 0 | 0 | 0 |
| Pacific..... | 12 (6) | 10 (5) | 8 (3) | 2 (2) | 0 | 0 | 0 |

100,000 or more in the Manufacturing Belt would have declined in population. This group includes Buffalo, Chicago, Cleveland, Newark, Pittsburgh, St. Louis, Trenton, and Youngstown. In the East North Central states, for example, the median rate of increase for the non-white population of the eighteen major cities was 86%. West Coast urban centers also had large percentage increases.¹³

Losses or minor (less than 3%) gains occurred during the 40's in 20 of the cities which had a population of over 100,000 at the outset of the period. Seventeen of these quiescent cities are in the New England-Middle Atlantic states. As Table IV shows, the nation's six cities of more than a quarter-million population which were in this dormant group all were in these northeastern states.

Nineteen major cities increased more than 25% in population between 1940

and 1950 (Tables IV and V). In the previous decade only 5 of the 100,000-cities achieved this position. During the 40's all of the cities were in the southern, southwestern, and western sections of the country.¹⁴ The greatest percentage increase was made by San Diego (64.4%), whereas, Miami led during the 30's (55.6%). San Diego held second place in rate of gain for the earlier decade. Los Angeles was mentioned earlier as having the largest numerical increase—about 466,000. Between 1920 and 1930, however, this city added more than 660,000 persons. In that same period Chicago made its last increase of 25% (675,000). This gain is particularly remarkable inasmuch as Chicago's population in 1920 had been over 2,700,000.

Areal growth of cities can be a major consideration in their population growth as suggested earlier with respect to

¹³ U. S. Bureau of the Census, *1950 Census of Population*, Series PC-14, No. 1.

¹⁴ Wichita lies about 45 miles north of the Oklahoma boundary, but can justly be considered a southwestern city.

Texas cities. The effect of expanding corporate limits on city population can be dramatically shown in the case of Dallas and Houston. While the total population of Dallas increased nearly 50% during the last decade, the 1950 population of the city area as of 1940 gained only 8-9%. The addition of 68 square miles during the 1940's meant a gain of approximately 114,000 persons. In Houston, where the population increase for the ten-year period was 55%, the city's 1940 area gained about 19%.¹⁵

¹⁵ The comparison can be made quite accurately in the two cities because only minor changes were made in the areas of the 1940 census tracts.

In January 1951 the voters in an area of 10.7 square miles adjacent to Seattle approved annexation of that city. A present population of more than 35,000, with prospective substantial future growth, will make a sizable contribution to Seattle's 1960 Census figure.

An annexation to Atlanta of 81 square miles and about 100,000 people on January 1, 1952 will in itself mean a population increase of 30 percent for this city in the 1960 census. See Paul Van T. Hedden, "Atlanta Breaks Through Its Boundaries," *American City*, November 1951, pp. 106-7.

The annexation of about 87 square miles during the intercensal period was the largest made by any American city. Table V indicates that Memphis was the only major non-Texas municipality to make exceptionally large additions in area during the 40's. Areal increases of relatively high proportions are more widespread among cities under 100,000 in population.¹⁶ Many of the metropolitan centers in the Northeast and Middle West are completely or nearly surrounded by incorporated suburbs, thus minimizing annexation as a means of their gaining population.

Major consideration has been given to the rates of growth of American cities over 10,000 population in order to note regional trends. The changes

¹⁶ A yearly summary of annexations of one-fourth square mile or more for cities over 5,000 population appears in *The Municipal Year Book of the International City Managers' Association*.

TABLE V—CITIES OVER 100,000 POPULATION IN 1940 WHICH INCREASED BY MORE THAN 25% BY 1950 AND AREAS WITHIN CITY LIMITS IN 1940 AND 1950

| City and State | Population | | Area * | | |
|------------------------------|-------------------|-----------|-------------------|-----------------|-----------------|
| | % Inc. 1940-50 | 1950 | % Inc. 1940-50 | 1950 Sq. Mi. | 1940 Sq. Mi. |
| San Diego, California..... | 64.4 | 334,387 | 4.2 | 99.3 | 95.3 |
| San Antonio, Texas..... | 60.9 | 408,442 | 96.3 | 68.9 | 35.1 |
| Fort Worth, Texas..... | 56.9 | 278,778 | 90.0 | 95.0 | 50.0 |
| Houston, Texas..... | 55.0 | 596,163 | 119.1 | 160.1 | 73.0 |
| Long Beach, California..... | 52.7 | 250,767 | 14.8 | 35.1 | 30.6 |
| Norfolk, Virginia..... | 47.9 | 213,513 | 0 | 28.2 | 28.2 |
| Dallas, Texas..... | 47.4 | 434,462 | 155.0 | 112.0 | 43.9 |
| Wichita, Kansas..... | 46.4 | 168,279 | 33.0 | 27.7 | 20.2 |
| Miami, Florida..... | 44.8 | 249,276 | 12.7 | 34.2 | 30.3 |
| Memphis, Tennessee..... | 35.2 | 396,000 | 138.7 | 115.9 | 48.5 |
| Charlotte, N. Carolina..... | 32.8 | 134,042 | 55.4 | 30.0 | 19.3 |
| Spokane, Washington..... | 32.6 | 161,721 | nil | 41.6 | 41.5 |
| Tacoma, Washington..... | 31.3 | 143,673 | 1.7 | 47.9 | 47.2 |
| Los Angeles, California..... | 31.0 | 1,970,358 | 0.6 | 453.4 | 450.8 |
| Sacramento, California..... | 29.8 | 137,572 | 23.4 | 16.9 | 13.7 |
| Denver, Colorado..... | 29.0 | 415,786 | 12.5 | 67.1 | 59.7 |
| Tulsa, Oklahoma..... | 28.5 | 182,740 | 25.3 | 26.7 | 21.3 |
| Oakland, California..... | 27.3 | 384,575 | 0 | 53.1 | 53.1 |
| Seattle, Washington..... | 27.0 | 467,591 | 3.5 | 70.8 | 68.4 |

* Land areas are given except for Houston, Long Beach, Wichita, Memphis, Charlotte, Spokane, and Los Angeles for which only total areas were available.

Sources: Population—U. S. Bureau of the Census. Areas—Local official agencies. The figures are for January 1, 1940 and April 1, 1950.

which have occurred in urban places according to functional types—manufacturing, mining, dormitory, etc.—also invite attention, although this basis for analysis is not likely to reveal the sharp differences shown by a regional approach. This latter direction of investigation also has weaknesses since most of the geographic divisions are not subject to the same economic stimuli throughout their extent. They have, however, generally developed over a similar period of time—another significant factor.

The use of growth rates as a measure here should not be taken to indicate that dynamic growth qualities necessarily denote other favorable qualities. In fact, those urban places having marked growths during the 1940's will have many additional problems in the 1950's.¹⁷ The cities with stationary or declining populations also will face difficulties, particularly because of decreasing tax duplicates.

Continued expansion of the urban portion of the nation's population appears certain, aided in part by the newly-created urbanized areas which will ex-

pand from census to census. Also, some urban centers—such as suburbs in the northeast and the two California centers and central cities in the South and West—will likely make important future gains. It appears improbable, however, that the rates of growth of urban places of the size included in this study will be so high for so many places in future decades as in the one just ended. The basis for this statement is twofold. In the 40's a number of modest-sized communities were aided by the inclusion of college students in their population, a factor which may have quite different effects when the 1960 census is taken if relatively high enrollments are not maintained. Among the larger centers, the great rates of gain of cities in the South and West can hardly be expected to remain at so high a level, in part because of increasing size which makes high rates of gain more difficult to achieve. However, further development of resources and industry in these sections of the country probably will bring more widespread large-scale growth among the cities of moderate size.

All in all, the 1940's was a decade of urban growth—aided by some new census methods—which will be difficult to surpass in future decades.

¹⁷ For an analysis of the effects of population changes on cities see: Victor Roterus, "Effects of Population Growth and Non-Growth on the Well-Being of Cities," *American Sociological Review*, February 1946, pp. 90-97.

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The Results of Collectivization of Estonian Agriculture†

By E. JASKA*

BEFORE World War II about sixty percent of the population of Estonia derived their living directly from agriculture, which provided from fifty to fifty-five percent of the national income.

Although the growth of peasant ownership had proceeded rather more quickly in the former Baltic provinces than in the rest of the Russian Empire, a very large proportion of the land in Estonia was still owned by a few large owners before World War I. During the first years of independence nearly all the large estates were split up into small farm holdings. Agrarian reform in Estonia laid the foundations of social equality and caused a rapid rise in agricultural production. From 1919 to 1939 agricultural production rose by about 50 percent, or on an average of 2.5 percent annually, which is one of the best results recorded in the European countries during this period of time.¹ As a result of the rapid development of agricultural production, the dairy cooperatives and export unions established a reputation for Estonian butter, bacon and flax in the British and German markets. During the last prewar years the average exports of agricultural products from Estonia were: 6 million pounds of eggs, 6.5 million pounds of bacon, 14 million pounds of flax fiber and 31 million pounds of butter.²

† In collusion with Nazi Germany and on the basis of the secret Molotov-Ribbentrops of August 23 and September 28, 1939, the Soviet Union occupied the Baltic states, Estonia, Latvia and Lithuania and incorporated them into the USSR.

* Economic Division, Department of Agriculture, Ottawa, Canada, formerly with Estonian Department of Agriculture.

¹ E. Jaska, *Effects of Agricultural Crisis on Estonian Farming*, Summary of the Dissertation submitted for the Degree of Dr. Agr. at Tartu University, 1938, Tartu, 1938.

² Bureau Central de Statistique de L'Estonie, *Annuaire de la Statistique Agricole* (Tallinn: 1938), p. 156.

The Road to Collectivization

The progress of agriculture during Estonia's independence showed plainly that under Estonian conditions small farming was the most suitable form of agriculture. This production system, based on private property and the creative efforts of the free and independent farmer, produced rapid development and progress in all fields of economic and social life. By the end of the thirties Estonia and other Baltic states had become countries with a flourishing and well-balanced agriculture.³

After the establishment of the Soviet regime in Estonia in 1940, however, the Soviets started at once to change the farming system. Private property was immediately abolished and all land declared the property of the state. The maximum size of a farm was fixed at 30 hectares (about 72 acres). The new settlers were granted a maximum of only 12 hectares (about 30 acres) in order to keep their economic position feeble and thus avoid any difficulties arising when the time would be ripe for forcing them to join collective farms.

The Estonian currency was abolished and real agricultural prices were reduced by about 35 percent. The taxes of farmers were increased up to 30 percent of the value of gross returns. The farmers had to make compulsory deliveries to the state which were not in accordance with their production plans. As a result of this agricultural policy, the income from farming fell considerably in 1940.

³ Memorandum of the Free Estonian Farmers Federation to the delegates of the 4th Conference of the International Federation of Agricultural Producers at Saltsjobaden, May 29-June 8, 1950.

The net return, for instance, became negative and the real family farm earnings were reduced by more than 50 percent. The real wages of the Estonian farmers dropped by 80 percent, compared with the level of 1939.⁴

With the second Soviet occupation in 1944 the conditions prevailing in agriculture in 1940-41 were immediately restored but in a more drastic form. The system of compulsory deliveries at fixed prices and increased taxation was re-introduced on the lines of 1941.⁵ In addition to exorbitant taxes and compulsory deliveries, every independent farmer (that is one who had not joined a collective farm) was required to undertake a considerable amount of forced labour involving the cutting of timber and its haulage to railway stations, rivers or saw mills and the repair of a specified length of rural roads. In addition, farmers living in the neighborhood of towns were saddled with the duty of cleaning up urban ruins. Non-fulfilment of all these obligations was subject to severe penalties. By contrast, the first collective farms were patronized generously, both by sympathetic legislation and practical support.⁶

Soviet statements insist that the collectivization has been "voluntary" in Estonia. Many indications of the true state of affairs have appeared in the Estonian press and on the radio: such are the tales of "kulaks" hostility to collectivization, the innumerable infractions of the collective farms statute and the downright threats against those who resisted.⁷ There is no doubt that what has happened is a repetition on a smaller

scale of the struggles which accompanied collectivization in the Soviet Union.⁸

Progress of Collectivization

During the first occupation of Estonia in 1940-41, the Soviets did not deem it advisable to introduce the collective farm system. The reasons for this were partly of an economic, partly of a political nature. The Soviets went even further and instructed their functionaries and the CP leaders to regard anyone as an "enemy of the people" who dared predict that collective farms would be established in Estonia. Moreover, the paragraph referring to collective farms was excluded from the constitution of Soviet Estonia, which otherwise is an exact copy of those of the constituent Soviet republics. Nevertheless, collective farm law was immediately introduced as a compulsory subject not only at the juridical but also at the other faculties of Tartu University.

In the first years of the second Soviet occupation, which began in 1944, the economic situation in Estonia did not permit collectivization. The shortage of food was great, especially in the towns. The Soviets knew from earlier experience that collectivization would result in a steep decline of agricultural productivity, especially in the first years of the new system.

As soon, however, as the USSR had somewhat recovered from the ravages of the war, the Soviets began to insist upon collectivization in occupied Estonia on the pattern that existed elsewhere in the USSR. Accompanied by blasts of propaganda, the first seven collective farms had been founded in Estonia by the end of 1947 and in 1948 this figure rose to about 400, some of them existing only on paper.⁹ Although the farmers received

⁴ E. Jaska, *Estonian Agriculture Under the Soviets* (Augsburg, Germany: 1948), p. 15.

⁵ Jaak Survel, *Estonia To-Day, Life in a Soviet-occupied Country* (London: Boreas Publishing Co.,) p. 12.

⁶ E. Kareda, *Technique of Economic Sovietization, A Baltic Experience* (London: Boreas Publishing Co.,) p. 49.

⁷ N. Kärötamm (A speech of the Secretary General of the Estonian CP), *Rahva Haal*, Tallinn, December 26, 1949.

⁸ *The Economist*, March 18, 1950.

⁹ "Success of Estonian Grain Growers," *The Current Digest of the Soviet Press*, October 18, 1949, p. 47.

suitable "encouragement" the beginning was not auspicious. The Soviets drew their own conclusions and decided to apply other means besides economic pressure, among them the mass deportation of March 1949. After this the number of collective farms immediately rose to 2000. By the end of 1949 Estonia had 3017 collective farms embracing 102,500 former farms and 82 percent of the remaining farming population. This number also included 114 fishermen's collective farms where land was tilled along with the main occupation.¹⁰

The Size of Collective Farms

In 1949, the number of collective farms varied in the separate parishes (from six to twenty-three) which indicates that the size of the collective farms also varied considerably. For example, there were collective farms embracing only five former farms and others which included up to 127 farms with 3,200 hectares of land (1 hectare—2.47 acres). During 1950, 1217 collective farms were merged to form larger units. The average size of a collective farm is about 1037 hectares at present.¹¹ As far as has been possible to ascertain, the average Estonian collective farm has about 443 hectares of arable land and 70 to 120 head of cattle. The average amount of land per family is no more than 4 to 5 hectares of arable land and the family, as a rule, is surprisingly small, viz., 2.6 to 2.8 members on an average.¹²

Mechanization of Agriculture

In Estonia, mechanization of agriculture has not yet attained the level

which existed in the privately-owned small farms in 1939. The agricultural machinery requisitioned by the Soviets from private owners came from Europe and America, and it is impossible at present to obtain spare parts in Estonia. Almost all of it therefore has become unfit for use. Imports of machinery from the Soviet Union have not been sufficient to provide replacements, still less to increase mechanization. In 1949 and 1950 arable land cultivated by tractors was 0.2 million hectares while the total in cultivation was 1.12 million hectares, a figure which is considerably lower than the land in private farms in 1939.¹³ Tractors are in use mainly on the state farms while the collective farms have to make do with horses, the number of which decreased substantially during the recent war. This fact had a devastating influence on the general standard of cultivation.

Some Results in Agricultural Production

According to Communist sources, collectivization of agriculture provides the highest yields in agricultural production. The statistical data, however, show that the standard of agricultural production on collective farms is noticeably below the achievements of free farmers. This was indicated by a comparison of the prewar production of collective farms in the Leningrad district with that of Estonian farm production in the same period. These areas adjoin each other and the climatic conditions and fertility of the soil are the same for both. A great part of the population of the Leningrad

Activities in Eastern Europe, compiled by *The Baltic Review* (Stockholm:) p. 24.

¹¹ Vabariigi parteiorganisatsioonide ülesannetest Eesti NSV põllumajanduse edasiarendamiseks. *Rahva Haal* (Estonian Newspaper) December 1950, p. 2.

¹² Endel Kareda, *Estonia in the Soviet Grip: Life and Conditions under Soviet Occupation 1947-49* (London: Boreas Publishing Co.) p. 24.

¹³ Estonian Information Centre, *Estonian Agriculture under the Soviet Regime*, (Stockholm: 1950), p. 5.

¹⁰ Estonian Information Centre, *Estonian Agriculture under the Soviet Regime*, A Summary of Conditions in Soviet Estonia in 1949-50 after Data obtained from the Soviet Press and Statements of Persons Escaped from Soviet Estonia (Stockholm: 1950); "Estonia's First Collective Farm Village," *The Current Digest of the Soviet Press*, July 19, 1949; and "The Road to Agricultural Collectivization," Newsletter from Behind the Iron Curtain, Reports on Communist

district is of Fenno-Ugrian origin and many Estonian colonists had settled there during the Czarist rule. The only difference between the two areas was in their economic system: the collective farm system of the district of Leningrad and the privately-owned farm system of Estonia. The official data show the following picture:

YIELD PER ACRE IN BUSHEL, 1938¹⁴

| | COLLECTIVE FARMS (Leningrad district) | SMALL FARMS (Estonia) |
|---------------|--|--------------------------|
| Rye..... | 11.4..... | 20.3 |
| Wheat..... | 5.1..... | 21.2 |
| Potatoes..... | 138.0..... | 190.0 |

The Soviets often describe the Leningrad district as very advanced in livestock production. However, in 1939 only 66 percent of the collective farms possessed cattle, only 18 percent maintained hogs and only 18 percent had sheep. The number of livestock per 100 hectares of agricultural land was as follows (compared with Estonian small farms in brackets): cattle 28.7 (71.0), hogs 5.7 (44.5) and sheep 7.3 (69.9).¹⁵ The average yield of milk per cow in Leningrad district was 2580 lbs. as against 4810 lbs. in Estonia in 1939. To sum up, a relatively small sown area with a small crop yield characterized the collective farms in Leningrad district. Those collective farms are held up as examples by the Soviets for the Estonian farmers at the present time.

The Soviet Estonian press indicates that present collectivized harvests have greatly exceeded those of prewar years in independent Estonia, that the country abounds in riches and the living standard of the people is incomparably higher than in "bourgeois" Estonia.¹⁶

¹⁴ E. Kareda, *Technique of Economic Sovietization, A Baltic Experience* (London: Boreas Publishing Co.) p. 38.

¹⁵ *Ibid.*, p. 39.

¹⁶ *Rahva Haal*, Tallinn, December 15, 1950.

The official information however, is different from the press reports. On December 15, 1950, the Soviet Press reported a resolution of the Estonian Communist Party at its plenary session on December 6 and 7, which stated that in the coming 4 or 5 years Estonia must become self-supporting as regards grain and must therefore increase its sown area by 24 percent. Simultaneously, the number of cattle, sheep and pigs must be increased 1.5 to 2 times, poultry 50 times, the output of butter 2.5 times, the output of meat four times and of eggs 50 times.

On January 26, 1951, the Council of Ministers and the Central Committee of the Communist Party published a joint regulation on agriculture according to which the area under grain will be brought up to 1,347 thousand acres by 1955, the average yield of rye to 32 bushels per acre, winter wheat to 30 bushels and summer wheat to 28 bushels. The number of cattle must be increased by 96 percent, pigs by 120 percent, sheep by 73 percent, and poultry by 267 percent. The output of butter must be 22,000 tons in 1955, the output of pork 38,000 tons and of eggs 50 millions.¹⁷

According to the figures and percentages given above, the present output of butter may be estimated at about 8,000 tons and of pork 9,500 tons. In 1939 the Estonian dairies produced 17,000 tons of butter and the output of pork was 45,000 tons. This means that at present Estonia produces about half of the grain and less than half of the livestock products the country produced before the Soviet occupation.

Compulsory Deliveries

From its total harvest the collective farm must in the first place deliver a compulsory quota to the State; thereupon

¹⁷ *Ibid.*, December 15, 1950 and April 12, 1951.

pay in kind to machine and tractor stations for assistance in cultivation (about 25 percent of the harvest), set aside seed grain for the next year and feed for its animals as well as reserve of 10 to 15 percent of the harvest as a permanent fund against a possible bad harvest in the following year. In addition a quota is set aside to be sold in the free market in order to obtain money to pay the administration and renew equipment. The remaining surplus is distributed among the members of the collective farm in proportion to the number of so-called "labour days." The members of the collective farm must deliver to the state a tax in kind on the potatoes which they grow on their plot and the milk and meat they obtain from their own animals.¹⁸

In 1951 collective farms in Estonia had to deliver the following compulsory quotas: from 2.5 to 3.5 kilogrammes of meat and 30 to 50 kilogrammes of milk per hectare of agricultural land. In addition, the collective farmers were forced to deliver to the state from 30 to 50 kilogrammes of meat per household and 250 to 360 kilogrammes of milk per cow.¹⁹

The Income of Collective Farmers

The members of the collective farm are entitled to an individual garden plot of 0.3 to 0.6 hectares on which they may keep up to two cows, as many pigs, sheep, goats and an unlimited number of fowls. This privilege is, however, largely theoretical as the plot cannot provide a sufficient quantity of forage and the small income of the collective farms admits of no savings for the purchase of livestock. For the most part the collective farmer is not allowed to keep a horse and he has to

make compulsory deliveries and pay considerable taxes on his livestock and garden plot.

Instead of taxing the collective farmer on the actual money income he receives from the produce of his private plot, or on an estimate of the value of his crop at current prices, the Soviet Government has established "norm" of income on every branch of a household. The tax is collected on the total "norm income" according to a fixed scale of rates which rises steeply in the higher income brackets. For instance, the income of a collective farmer who has an acre of vegetable garden land, 1 cow, 2 pigs, and 5 sheep, is estimated at 8400 roubles. Out of this "norm income" the farmer has to pay 2142 roubles as income tax.²⁰ At the same time the collective farmers pay various other taxes for "cultural needs" and are compelled to subscribe to the state loan bonds for a minimum of 500 roubles.

The Soviet Estonian press indicated that the average pay of a member of an economically sound and prosperous collective farm was as follows, per "labour-day" in 1949: 4.5 to 5 roubles in cash, 2.5 to 3 kilogrammes of grain, 3.5 to 4 kilogrammes of potatoes, 4.5 kilogrammes of straw. The same sources indicate that the average collective farm members usually have 200 to 400 labour days to their credit.

According to these data the cash income of an average farmer's family (2.6 persons) on a prosperous collective farm may be estimated at about 4300 roubles a year. Deducting income tax and various other obligations from the estimated cash income would be about 1700 roubles. An additional source of cash income, of course, is the farmer's private plot of gardenland and livestock products sold in the free market. How-

¹⁸ Arthur Ekbaum, *Destruction of Independent Farming in East Europe* (Stockholm: Estonian Information Centre, 1949), p. 29.

¹⁹ *Rahva Haal*, March 23, 1951.

²⁰ *Journal of Supreme Soviet* (Moscow): August 30, 1951.

ever, this money forms only a small part of the total cash income of a collective farmer's family.

In order to estimate the real income of a collective farmer's family the prices for consumer goods may be used as indicators. In 1951, representative prices were as follows: sugar 11 roubles per kilogramme (2.2 lbs.), a cotton shirt 75 roubles, a pair of shoes, 220 to 475 roubles and a ready made suit 600 to 1200 roubles.²¹

Summary

(1) In the course of the last two years the Soviets have abolished the Estonian

small farming system which, as a result of an agrarian reform implemented 30 years ago, was among the most ideal and socially-equitable in Europe.

(2) Collectivization has put a full stop to the vigorous progress which Estonian agriculture was making. The level of agricultural production has fallen and there is an acute shortage of food in Estonia at the present time.

(3) The income of the Estonian collective farmers has fallen to a level which is about 80 percent lower than the income of free farmers when Estonia was independent.

²¹ "Russian Living Standards," *The Economist*, November 17, 1951.

Fragmentation of French Land: Its Nature, Extent, and Causes†

By FREDERIC O. SARGENT*

THE greatest single factor limiting an increase in French agricultural production is the division of farm land into an excessive number of minuscule lots. One-half of the arable land in France and one-fourth of all the farm land is so severely cut up and fragmented that production costs are high and mechanization and rational land use impossible. The problem posed by fragmentation exists in nearly every farm community in France. A few examples will serve to indicate the severity of the problem. One farm in Savoie consists of 10 hectares¹ and 275 parcels; a village in Loir et Cher has 5,075 parcels and 828 hectares; another in Loiret has 48,000 parcels and 2,771 inhabitants, i.e., an average of 17 parcels per head of about 50 parcels per family head.² These examples indicate the seriousness of the problem without showing the extremes. Extreme cases exist in which a holding consists of a few square meters, a grape vine or a single olive tree.

Excessive fragmentation of farm land has prevented the technological progress of French agriculture in numerous ways. A great many of the small parcels which make up a farm are too narrow and irregular in shape to permit them to be

worked efficiently. Some are located a long way from the farm buildings. At Saulzet in Allier, before the recent consolidation, several parcels were cultivated which were 4 or 5 kilometers from the farmstead.³ In cases of this nature the land is often abandoned as its product is not worth the cost of cultivating it. Many parcels are completely surrounded by other parcels and so can be reached only by crossing another man's field. The haphazard location of these parcels takes no account of the slope of the land and so makes rational soil erosion control impossible. The amount of time spent going to and from the lots represents a considerable amount of unproductive labor and reduces the production per man hour. According to one study on this point⁴ it was estimated that for 10 hours of work the time actually spent working the soil was 9½ hours on consolidated holdings and only 8 hours on a parcelized farm. The time spent commuting also represents an added expense in gasoline and usage of equipment. Additional time and energy is wasted because of the excessive amount of hand work which has to be done in the corners and along the borders of the tiny lots where the machine can't operate. Another result of the multiplicity of borders is that thousands of disputes and law suits over boundary claims are brought before the French courts each year. In some cases lots lie idle because no one can prove ownership of them.⁵

† The basic material in this paper was obtained in connection with a study made in April and May 1951 by the author at the request of E. A. Perregaux, Chief, Food & Agriculture Division, Economic Cooperation Administration, Special Mission to France.

* Food and Agriculture Division, United Nations, Bonn, Germany.

¹ Glossary of metric terms used in this paper: one hectare equals 100 ares, 10,000 square meters, or 2.471 acres; one are equals 100 square meters or 119.6 square yards; one kilometer equals 1,000 meters, .62137 miles or 3,280 feet, 10 inches.

² Jean Marie Schmerber, *Le Reorganization Fonciere en France, Le Remembrement Rural* (Paris, France: Imprimerie A. Coueslant, 1949).

³ *Ibid.*, p. 33.

⁴ Javel, *Le Temps*, November 1936.

⁵ L. Bourdier, "Le Remembrement en Bretagne," *Revue des Agriculteurs de France*, 1939.

The parcelling of farm land precludes the possibility of making improvements such as drainage and irrigation ditches, enclosed pastures, run off control works and terraces.

Where the parcels consist of long narrow strips with no hedges on the borders an owner is forced to follow the same rotation scheme as the owners of bordering parcels.⁶ A progressive farmer who would like to institute a new rotation system is prevented from doing so by the objections of the most conservative and unenlightened farmers who own strips of land contiguous to his.

The three principal causes of fragmentation have been (1) the system of compulsory crop rotation, (2) inheritance laws and practices, and (3) the nature of the land market.

Under the system of compulsory crop rotation the arable land which belonged to the village in medieval times was divided into several blocks, one of which was left fallow each year. Each family head was obliged to hold a strip of land in each of the blocks in order to be assured a supply of all the necessary crops each year. If he wished to hedge against a localized crop failure due to hail, frost or other cause and take full advantage of all soil types, he would try to buy a strip of each soil type on all sides of the village.

The narrowness of these strips made it necessary for all the farmers owning strips in a particular field to cultivate the same crop at the same time. A farmer couldn't harvest an early crop in a three or four-meter-width strip without damaging neighboring crops. This practice, when combined with the many coexistent communal grazing rights represented a fairly effective adjustment to the technological level and the social organization which obtained in the Middle Ages. It

became outmoded as communal grazing rights disappeared and as farm machinery was developed in the last 150 years. With the loss of communal grazing rights the farmer no longer had the privilege of grazing his animals on all the pasture land in the community. In order to raise cattle efficiently he needed large pastures to replace his narrow strips which were too small and scattered to make fencing practicable. In order to use machines effectively he needed fields that were several times larger and wider than those which sufficed for hand labor.

Inheritance laws and practices have also been an important factor in increasing fragmentation in some areas. The Code Civil, basic law of France since its adoption in 1803, requires that the inheritance be divided equally among all the heirs.⁷ This law, passed in an attempt to insure the breakup of large feudal holdings, resulted in the excessive fragmentation of land in some areas. It did not lead to fragmentation in all areas as some writers have suggested. The peasants showed considerable ingenuity in maintaining their holdings intact in spite of this law. They accomplished this by limiting their families to one male heir, by letting one son buy out the interests of the other inheritors, and by other tricks and dodges that outsmarted even the lawyers.

The narrowness of the land market also contributed to the purchase of parcels which were too small for economic exploitation. The peasant who was able to buy more land could not always find a contiguous or well-located parcel for sale. His choice was confined to the parcels which were offered for sale when he was ready to buy. Since land was not bought and sold as readily then as it is today there was little chance for him to buy an ideally located piece. He was forced

⁶ Schmerber, *op. cit.*, p. 37.

⁷ Code Civil, Articles 826, 831, 832.

from necessity to buy parcels which were too small and too far from his farm buildings for most efficient use.

Intense love of land led the peasants to make great sacrifices to maintain and enlarge their small holdings. They would save frugally for decades to buy one more small plot. This single-minded insistence on buying land, in conjunction with their meagre capital-accumulating ability, resulted in the repeated purchase of tiny lots. Several generations of this method of land purchase increased the fragmentation problem.

The real estate dealings of the landed gentry and land speculators contributed to the breakup of rational farming units. Many of the landed gentry whose incomes consisted of fixed cash rents found themselves in financial difficulties as a gradual inflation reduced their real incomes. In order to maintain some semblance of their accustomed standard of living, they resorted to the piecemeal sale of their domains. When the *seigneur* required large cash sums he sold his land to bourgeois speculators, who in turn cut it up into tiny lots to resell to peasants at enhanced prices. In the course of the years, this sort of transaction has aggravated the parcelling problem.

There were other institutions besides the rotation system, the Code Civil, and the land market which contributed to the excessive division of farm land. One of these was the grouping of farm buildings in rural villages and hamlets. These clustered settlements which have persisted for many reasons permitted and abetted the development of scattered-lot holdings. When most of the field work was done with hand tools it was reasonable for a peasant living in a compact village to purchase a lot which was apart from his other holdings, provided it was large enough to require half a day's work at a time. He could as easily work in a

different field after the midday meal at his house as return to the one he worked in the morning. The diseconomies of working small scattered parcels were multiplied when the area that could be worked in a single work period increased as a result of the development of farm machinery in the 18th and 19th centuries. The use of tractors in place of animal draught power in the 20th century has further increased the minimum area that could be worked efficiently and accentuated the inefficiency of tiny plots.

Repeated attempts have been made to consolidate farms in France since the 17th century. Those attempts which were successful were accomplished either through the influence and energy of a single individual or in war-devastated areas where normal life had been interrupted and a new start was necessitated. These consolidations afforded valuable experience but were not on a scale commensurate with the problem. Until 1941 the laws providing for consolidation were frustrated by inadequacies in their provisions and by the peasants' fears of being worsted in the exchange. Both the improvements in the enabling law and the development of the peasants' understanding of the problem have laid the foundation for a successful consolidation program following World War II.

The Law of March 9, 1941 and How It Works

The law of March 9, 1941, which provides the legal basis for *remembrement* operations, was drafted after a long and careful study of the failure of previous laws to bring about the desired results. This law which supersedes all previous laws on the subject includes noteworthy techniques of democratic administration and enlarges the concept of public interest in private property.

One of the basic innovations of the 1941 law is the greater scope and meaning

given to the concept of remembrement. Former laws were concerned exclusively with the problem of combining small parcels so as to make larger parcels. The present law concerns itself also with the distance of parcels from the farmstead, the dispersion of the parcels of a single proprietor and the consolidation of exploitations.⁸

Unlike its predecessors which permitted only landowners to initiate a remembrement, the present law permits any landowner, renter, or share cropper to request a remembrement and thereby initiate proceedings.⁹

The previous law entrusted the work of carrying out a remembrement to an "association syndicate" even though these societies were poorly fitted for the job. They reflected the attitude of the majority of the farmers in a commune which was primarily one of skepticism and doubt and made no provisions for the consideration of the national or public interest. The Communal Commissions which replaced the syndical associations are easier to set up, operate more effectively and have more authority. They are authorized to take all the actions found necessary to execute the remembrement including the expropriation of property. The Communal Commission is representative of the farmers in the commune but its members are *chosen* carefully from among the community leaders who are convinced supporters of consolidation.

Another important innovation is the substitution of a Departmental Commission for the Arbitral Commission. Under the old law of 1935 a separate Arbitral Commission had to be set up for each remembrement project. The present plan provides for a single Departmental

Commission which receives complaints and arbitrates disputes for all the communes in the department. This set-up provides all but the first commune in the department to be consolidated, with a functioning and experienced arbitration machinery.

The administrative machinery of remembrements was greatly improved in the 1941 law by the more active participation of the *Genie Rural*¹⁰ which is required to direct and supervise the operations. This provision, added as a result of previous experience, provides an experienced professional counsel and secretariate for each Communal Commission.

The real genius of this law is in its flexibility. France is a country of diverse peoples and customs. In order to be applicable in widely different regions the basic law had to leave much to the discretion of the administering authorities. The 1941 law leaves a great many critical decisions up to the communal authorities. The initiation of the project, the amount of land to be consolidated, the handling of recalcitrant proprietors and the evaluation and classification of each plot are all decisions which must be made by the local authorities albeit with the professional aid of a surveyor and the *Genie Rural*.

The first procedural step in executing a remembrement is to establish a cooperative and receptive attitude on the part of the farmers. This is accomplished by holding public meetings at which the *Genie Rural* and farmers with actual experience describe the process, testify to its advantages, and answer the questions of skeptical farmers. When public opinion is sufficiently aroused and an active group of partisans has developed then it is time for a request to be made for a remembrement.

⁸ Recueil Des Textes Legislatifs et Reglementaires Concernant la Reorganisation de la Propriete Fonciere et le Remembrement, Ministere de L'Agriculture et de Rataille-ment, Paris 7, (Chapitre 3).

⁹ *Ibid.*

¹⁰ Department of Rural Engineers.

Any landowner, renter, or officer of one of the agricultural services (Service Agricole, Genie Rural, Eaux et Forets, Voirie Rurale) may address a request for a remembrement to the chief engineer of the Genie Rural of the Department. If a surveyor is available and the chief engineer believes that most of the farmers in the commune are favorably disposed toward the project, he obtains the approval of the Department Commission and then requests the *prefect* to set up a "Communal Commission of Land Reorganization and Remembrement."

After its constitution the first problem of the Communal Commission is to determine the area to be consolidated. The basic law delimits the problem by specifically excluding all land which is not primarily arable agricultural terrain. Property enclosed by high walls or which because of its special use will not benefit from inclusion may be excluded from the operation. Woods are generally excluded, vineyards and kitchen gardens and parcels near buildings may also be excluded from the operation. The communal commission studies the question, holds a hearing, reappraises the situation in light of the hearing and then takes a decision on the land to be included in the remembrement.

The next step is to search the titles and determine the exact nature of all rights pertaining to the land. Communal rights, liens, land belonging to minors or incompetents, abandoned land, etc. all may present some special problem which the Communal Commission must resolve. The title searching is the legal counterpart of the boundary and soil type measuring done by the surveyor.

The next step is to ascertain the exact area and productive value of each parcel of land. The surveyor must measure each parcel as the cadastral records are sometimes inexact. The productive value

is determined by a classification of all the soil types found in the demarcated area and then allocating a productivity value per unit of surface to each class of land. The number of classes is not fixed but depends upon the local conditions. Six or seven classes are generally sufficient to cover all soil types. The process of estimating the value of each parcel is a collective work. Each communal commission member must give his opinion on each parcel. This productive value is a hypothetical rather than market value. Its purpose is to provide a basis for the redistribution of lots according to their proportional equality with the value of the original holdings.

The next step is to determine what abandoned or uncultivated parcels may be expropriated for the purpose of creating new family farms or for reforestation. After all this pertinent information has been gathered the commission must publish it and systematically collect all comments and criticisms pertaining to it. After the hearing on this basic compilation the commission and the surveyor proceed to draw up a proposed new layout of roads and lots.

There is no fixed rule concerning the number of parcels given to each farmer. That depends upon a number of local conditions such as whether or not the area consists of open or hedged fields, large plain or uniform soil, or uneven terrain with various soils, also the crops grown, and the desires of the farmers. Many farmers still prefer to follow the ancient practice of having at least one lot of each soil type found in the commune. It is this consideration of individual desires based as they are upon experience in polycultural exploitations which prevents a remembrement from being as complete as it might be if the farmers were planning greater specialization of production.

This tentative new layout is submitted to the departmental chief engineer of the Genie Rural and is also made the subject of another hearing. The duration of the various hearings is set at fifteen days. Upon termination of the hearings the communal commission studies the information collected, listens to the recommendations of the commission member who took the statements, listens to all interested parties who wish to present their case to the commission, and then makes a decision on the questions that have been raised.

Farmers who are not satisfied with the communal commission's decisions concerning the proposal reallocation may go before the Departmental Commission. Before he can be heard by this body the plaintiff must (1) have made his complaint to the communal commission, (2) have a precise written statement of his complaint, and (3) specify the adjustment desired. The Departmental Commission may modify the decisions of the lower body or ask that body to re-examine its decision. The decision of the Departmental Commission is without appeal except upon charges that it is incompetent, that it has exceeded its powers or that its decision is in direct violation of the law. The technical decisions of the Departmental Commission are final and cannot be appealed.

After the Departmental hearing is completed, and the necessary adjustments have been made on the land, all interested parties are given a month to make a final appeal to the Departmental Commission. After all complaints have been adjusted or rejected by the Departmental Commission the new layout becomes law and the proprietors take possession of their new lots according to the time-table published with the proposed new layout. Although the taking possession of new lots is timed to disturb

the rotation system as little as possible it is bound to cause some disruption. In highly fragmented regions a period of two or three years is necessary before farmers can fully reestablish the rotations they want on their new fields.

As a final step in the remembrement the new layout maps and all pertinent documents are made a permanent part of the cadastral records which are kept at the Mairie, or town hall of each commune.¹¹

Operations under the Law of March 9, 1941 did not begin until 1943 and were not numerous before 1946. They have been increasing at a considerable rate since that date.

As of October 1, 1950 remembrements have been completed in 725 communes affecting 525,833 hectares. They were in process in 1,405 communes affecting 1,069,277 hectares and have been decided upon but not yet commenced in 1,484 communes and 1,084,242 hectares. To combine those figures: 3,614 communes and 2,679,352 hectares have been, are being or soon will be consolidated. In 25 departments consolidations have not begun; in 39 departments they have barely been commenced and their numbers are not large. Only in about 15 departments are remembrements really under way on a satisfactory scale.

The Monnet Plan Report anticipated achieving a rate of consolidation of one million hectares per year by 1950. The increase in costs of consolidation, difficulties encountered in obtaining the necessary number of technicians and other considerations led to a reduction of this goal to 750,000 hectares per year to be attained in 1953. Although this represents a considerable lowering of sights, it by no means indicates any backing down from the programs. It represents rather a scaling down of the

¹¹ Recueil des Textes, *op. cit.*

plans to conform to what is politically attainable. If 750,000 hectares are consolidated every year from 1953 on, the 10-million-hectare goal will be attained in 13 years instead of 10. This still constitutes speedy progress in any such fundamental and difficult reform.

When the present goal of 10 million hectares has been achieved the job will not be done. The census figure of 10-million hectares is based on individual estimates of whether or not consolidation was necessary. Many fragmented areas were not reported as requiring consolidation. Another large field for future work by the Genie Rural will be in executing a second consolidation in all consolidated communes. With continued adoption of improved techniques and continuous development of the farmer's comprehension of technical problems demands for second consolidations should be numerous 10 to 15 years after the first one is completed.

Critical Appraisal of the Remembrement Program

One of the most difficult problems of administration in a representative democracy is to obtain in any given law a blending of centralized and local authority which will permit efficient operation without sacrificing either local control or representation of the public interest. Rural action programs are always faced with this dilemma of a simultaneous necessity for both grass roots participation and responsibility as well as some amount of central government control and leadership.

The French remembrement program is a very interesting example of a process which combines community participation, departmental surveillance and central government administration in a rich mixture which leads to the solution of the problem in a democratic yet sufficient

way. The delicate quality of this mixture of authority and democracy is demonstrated by the different attitudes toward the law which are held by different people concerned.

In commenting on the nature of the remembrement program a Parisian agricultural economist stated that the program was definitely authoritarian. From the literally-legal point of view this statement is valid. The basic law definitely gives the authorities of the Genie Rural the power to carry through a remembrement regardless of the opposition encountered. The recalcitrants can be given the choice of complying, getting out or being expropriated. However, this is only one aspect of the law and one that is de-emphasized in practice.

A quite different comment was made by the mayor of a small commune which was in the process of being consolidated.¹² He said: "The work of the Remembrement is done by the Communal Commission and sub-commission. The survey does the measuring and nothing more. All a surveyor knows is numbers. The Genie Rural help out quite a bit but it doesn't direct." This statement was from a man who knew the functions of the various participants in the remembrement from first hand experience.

A third point of view is that expressed by a surveyor. He criticized the program for being much *too* democratic. He was concerned over the time required to adjust claims and thought that the process could be speeded up considerably if the peasants could be made to accept the new plans without time-consuming hearings.

When asked this same question, a departmental engineer of the Genie Rural¹³ admitted that compulsive authority was vested in his office and that of

¹² M. Camille Bruneau, Brion, Yonne.

¹³ M. Pitout, Auxerre, Yonne.

the Departmental Commission, but added that any attempt to use it would probably lead to a complete breakdown of the program. By the simple expedient of moving or removing new boundary markers dissatisfied peasants could hold up the project indefinitely. He said that the remembrement was theoretically compulsory but that its execution was democratic, being based on good judgment and cooperation which could not be compelled.

The fact that this law is authoritarian in theory but democratic in practice is evidence of the delicate balance it maintains between the power and authority of the national government on the one hand, and the rights and interests of individual farmers on the other. This law is not at all a means by which the majority enforces its will upon the minority. It is rather a process of problem-solving in which the minority is reduced to an intransigent few by inducing them to participate as fully as possible in the proceedings. By holding hearings at every important step in the process, by considering seriously all objections and by resolving a large majority of them in favor of the plaintiff, the remembrement becomes a very local, democratic process in which, in spite of the letter of the law, authoritarian administration is noticeable by its absence.

New Concept of Property Rights

The French remembrement program constitutes a profound revolution in the basic institutions and ideas of French rural life. It would, in fact, be difficult to find an example of a greater change in farming techniques, rural institutions and peasant attitudes brought about by the democratic or any other process in a similar period of time.

In the realm of ideas the magnum opus of the remembrement has been, and

is, to upset the concept of property held since the French Revolution. The Revolution of 1789 "freed" property from the multiple entanglements and liens which existed under the feudal regime. Ownership became nearly an absolute right vested with extreme privileges and powers.¹⁴ In order to write finis to the Ancien Regime the architects of the Revolution liberated property from claims by the commune, the church, and the hierarchy of feudal overlords; and made it a commercial, marketable product. Ownership of land became a goal and a symbol. It was a permanent long-term primary goal. Once attained, it became a symbol of status in the community. If a person owned land, he could erect a high wall around it and enjoy unchallenged sovereignty over his small domain. This desire for exclusive ownership was a facet of the intense individualism nourished by the Revolution. It resulted in conspicuous consumption of a very wasteful nature. A peasant had to own his own span of horses even though his small holding could be easily worked by sharing a span with a neighbor. The desire for exclusive ownership as a satisfying symbol of prestige did not permit the joint ownership of horses or any other factors of production.

The remembrement has altered this nearly absolute concept of property as well as its companion, the attitude of extreme individualism. Under the present law, land becomes one of the factors of production which must be adjusted in the *public interest* so that it will better serve the farmers and the nation. The concept of ownership remains but it is a radically circumscribed concept. Ownership no longer refers to exclusive rights over a specific area of land but to limited

¹⁴ Article 545 of the Code Civil states: "Nul ne peut être contraint de céder sa propriété, si ce n'est pour cause d'utilité publique, et moyennant une juste et préalable indemnité."

and socially compatible rights, over a certain quantity of the productive factor: land. The rights of society are now recognized to transcend those of an individual proprietor in more instances than they previously did. The individual may be forced by the powers vested in the state to submit to a change in the content of his proprietorship in the interests of greater production for the nation. *Production* has superseded *ownership* as a prime value governing the legal status of land. While the right of eminent domain and expropriation was exercised previously for the construction of such public facilities as roads, railroads, canals, schools, etc., it can now be used to reshuffle proprietorships in the interest of greater production.

Another facet of this peaceful but profound revolution is the trend from excessive individualism toward greater cooperative activity. The farmer who used to own a span of horses which was underemployed, now is proud to own one-seventh of a cooperative tractor which is fully employed and much more efficient. A veritable spate of cooperative activity has followed the completion of remembrements in some areas. In the department of Yonne, for example, where a large number of remembrements have been completed or are in process, there is a new co-op dairy (at La Roche), a large artificial insemination center, as well as numerous tractor and farm machinery cooperatives which have been organized in the last few years.

The remembrement is not the single cause or even the principal cause of this blossoming of technical progress and cooperative action. Revolutions are generally so complex as to defy facile explanation. This revolution is no exception. It is so far-reaching in its nature and its effects that its roots must go far back into the history of rural life. The laws

regulating share cropping and farm renting have contributed considerably to this change. These laws have increased the rights of the renter at the expense of the owner in such a way as to make the land better serve society. A renter is now credited for capital improvements he may make and he must be given an option to buy the land he works before it can be sold. The remembrement is, however, the cornerstone of this change as far as observable, reportable facts are concerned. The technological and institutional innovations that are taking place are made possible by this land reform.

The Genie Rural has had enough experience in consolidation and enjoys enough prestige among farmers to permit them to make a bold experiment. They might select one commune and show each farmer in it where he could have a farm of no more than five pieces and how he might best use such a farm to maximize his income. If successful, such an experiment might lead to revolutionizing the already revolutionary remembrement and so permit consolidations which will endure for decades instead of ones that are technically outmoded as soon as they are completed. After investing so much money in the program the state should get something besides 80% less fragmentation—it should get the most efficient farming units that conditions will permit.

The principal criticism to be made concerning the present program is that the remembrement process is not more closely combined with the services of an agricultural advisor. In view of the need to increase agricultural productivity this is a most serious fault. The remembrement generates a great deal of confidence in the Genie Rural and other government employees. The peasant becomes convinced for the first time in centuries that these functionaries of the government are

really interested in helping him. These peasants who have seen the wonders worked by the surveyor and their own planning skill, who have cooperated to purchase a tractor, process milk or breed their cows would be receptive to a great deal more help and guidance if it were tactfully given by someone sympathetic to their problems. This new-born confidence in the *Genie Rural* and in themselves, as well as the new receptive attitude toward the adoption of mechanical techniques, would make an ideal opening for a "county advisory agent" to come in and stimulate further technical progress.

One of the aspects of the land consolidation process which must be criticised from the technical point of view is the soil classification system. The soil types are identified and classified largely by the peasants themselves. Although this arrangement is of critical psychological importance in developing and maintaining peasants' cooperation, it often leads to the delineation of an excessive number of classes of land which seriously complicates the redistribution process. In classifying the land the farmers make fine distinctions in fertility according to the amount of fertilizer they have seen the owner apply to each field. By this means they often arrive at eight to twelve classes when five or six should be sufficient. The subtle difference which the peasants see could be made to disappear in two or three years of scientific fertilization and rotation practices. If an agronomist were included in the remembrement team he could probably make great contributions in reducing the number of soil classes and in advising on soil use after the consolidation.

Another serious weakness of the present consolidation program is the absence of any adequate law to prevent the continuation of fragmentation by the operation of the inheritance laws. The law of

succession must be revised to prevent the chopping up of economic farming units upon the death of the owner. The remembrement law prevents subsequent subdivisions after consolidation has taken place but does not prevent continued subdivision in other areas.

Significance of the French Experience

In view of the world-wide problem of fragmentation of agricultural holdings it is necessary to study the French experience to see what might be gleaned from their trials and errors which could be applicable to similar problems in other countries.

A good basic consolidation law is one of the prerequisites of any land reform. The French have been successful in developing a law which seems to be well adapted to the problem it is designed to solve. Following are some of the characteristics of this law which merit a careful study by anyone interested in developing a basic land consolidation law that is at once both democratic and efficacious: (1) It is flexible enough to permit its application to regions which are quite different topographically and culturally. (2) It prevents further parcelling of consolidated areas. (3) It provides for considerable responsibility for the execution of the project at the local level. (4) The law does not make any great discriminations between owners, renters and share croppers in rights and responsibilities. (5) The law establishes a permanent county committee to oversee all the consolidations in the county. (6) Engineers in the Department of Rural Engineers who are also surveyors actively participate in, but do not overtly direct the work of town and county committees. (7) The communal committees, headed by a local person, are given responsibility for such important decisions as (a) the area to be included and excluded, (b) the

evaluation and classification of the land, (c) dealings with recalcitrant farmers, and (d) holding hearings and adjudicating all the disputes that they are able to settle. (8) It provides for the rule of the majority so that a minority cannot hold up the program. (9) County committees have the authority to make final decisions on most complaints with the possibility of appeal in special cases in which it is charged that the law is being violated.

A second characteristic of the French remembrement which should be of interest to other countries of the free world is the democratic techniques and methods of executing the work. These techniques as practiced by the French cannot all be set forth in numbered steps even though some of them are clearly indicated in the law. In general they depend upon an understanding of the principles of democratic procedure on the part of the administering agency and the key participants. There are many people in democratic countries whose impatience for faster consolidations leads them to advocate more provisions for compulsion in the basic legislation. The use of compulsion might hasten the consolidation of a few hectares but in the long run it would preclude the possibility of achieving additional basic land reforms and dry up the sources of rural cooperation and initiative which is the *sine qua non* of rural progress. There is ample evidence in the world today of how a compulsory land reform program contravenes the interests of farmers and nations alike.

A third admirable attribute of the French program is that they considered their investment in land consolidation not in a vacuum but conjointly with the requirements of investment in other sectors of agriculture and of other sectors of the economy. The amount of credit allocated to the remembrement was not

determined solely by lobbying and inter-agency log-rolling but rather by a careful consideration of the investment needs of the whole economy. A highly-qualified and relatively objective group of men surveyed the requirements of the whole French economy, allocated priorities and set up schedules of investment for a period of years. This very logical method of planning public investments in their relation to the total needs of the economy is one that might well be followed to a larger extent by other countries with large rural development needs.

A fourth facet of the French law which is worthy of note is that it recognizes fragmentation as a national problem which is worthy of the expenditure of national funds for its eradication. The first step in the solution of any problem is a clear statement of the extent and severity of the problem. If this step is taken it should become evident that fragmentation is a national rather than a purely agricultural problem and as such deserves to have the best efforts of legislators and all responsible citizens applied to its solution. It should also become evident that in the interests of increasing national food availabilities the consolidation process should be supported by funds from the public till.

Perhaps the most significant lesson to be gained from the French experience is the extent to which the often under-rated peasant is capable of taking on responsibilities and helping himself. Only a few years ago the peasants' attitudes and conservatism were considered to constitute a major obstacle to the accomplishment of rural reforms. Today with an adequate basic law, intelligent administration and a trained corps of rural engineers and surveyors, the peasants are showing themselves to be competent and willing prime movers in this fundamental land reform.

Since the early twenties the French farmers, along with those responsible for planning and legislating for the French economy, have come to realize the wider implications and the urgent necessity of modernizing and mechanizing agricultural techniques in the interest of greater

food production for the nation. This realization is manifesting itself in the remembrement, a program that is worthy of study by officials in other countries, where a democratic solution is being sought for similarly large and difficult land reorganization problems.

The Role of Social Research in Housing Design†

By SVEND RIEMER* and N. J. DEMERATH**

HOUSING standards and housing design assume some relation between the physical and human attributes of housing. Accepting the fact that light and air relate to certain infections, standard ratios of window and floor space are established. In the belief that crowding affects property values, family or community welfare, occupancy is regulated. The scientific study of such relations leads to the formulation of humane and effective housing standards and to the development of truly functional design.

The physical attributes concerned are complex, taken by themselves. When they are viewed in relation to human phenomena, complexity becomes confounding. Inherent are all the hazards and headaches of social research generally, added to the special difficulties of the housing field. Simple causal analysis is out of the question. Good housing is no one thing: it is a composite entity. Bundles of action and objectives become linked to bundles of housing conditions. One can investigate the effects of standards or design practices, but not their "ultimate" desirability. There will never be a fixed point on any continuum of desirable effects that is not basically arbitrary. Research cannot tell the scientist or housing expert what should be, finally and absolutely. One should be wary, therefore, of pseudo-scientific certainty and appeals to authority. Likewise misleading are the evaluative state-

ments which often are made in housing discussions. Take, for example, "necessary" community facilities and "suitable" site plans, the plea to consider "logical" boundaries for the planned neighborhood and to avoid "undesirable" adjacent land uses. Or recall the advice to keep the development "free from any grossly unfavorable environmental factors" and to aim at a "well-planned" relation between dwellings, circulation and community facilities; to keep "safe distances" from airports, and to avoid "excessive localized smoke, odor, or dust." In such instances one is confronted not with standards but with a check-list that begs for scientific answers which no expert can presently provide.

Where standards are specified with final and positive scientific authority, a look at the method of formulation generally reveals more scientific problems than are settled. To be sure, designing and building houses cannot wait until scientifically-based standards are formulated. Actually, the completely scientific standard is probably an impossibility, inasmuch as valuation is non-scientific and "all the facts" are never in. Yet there will be standards of some kind because houses cannot be built without them. Therefore, the efforts of such groups as the Committee on the Hygiene of Housing of the American Public Health Association are entirely justified. Nevertheless, the scientist must see present standards for what they are; based principally on personal judgment rather than on scientific knowledge. Where panels of well-informed judges are used, as they have been by the Committee on the Hygiene of Housing, personal bias is

† The material presented in this article was originally prepared for the Committee on Housing Research of the Social Science Research Council, as a part of the Research Conference on The Role of Social Research in Housing Design, held at Ann Arbor, Michigan in May 1951.

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reduced.¹ The best judgment is based not on random observation and hunch but on scientific observation. The panel-technique for standard formulation may well be continued, but at the same time scientific knowledge should be substituted for personal judgment and random observation when possible. The scientific knowledge required is knowledge of the relationships to which we now turn.

For a few of the relationships important for the establishment of standards of design there are rather good analyses.² With regard to most, scientific knowledge remains close to zero. The need for research into the various effects of specific housing conditions is practically unlimited. With few exceptions, the field is untouched by the social scientist. To formulate a wide range of research problems and identify significant relations in this area, as well as to classify and handle data quantitatively, theoretical integration is needed. Systems of definitions relating otherwise discrete housing items, physical and human, are needed. Such undertakings may not be research in its narrow sense. The task, however, could not be accomplished without a systematic treatment of a wide range of documentary materials and previous research. Research is needed on the immediate or "near" effects of different housing conditions. For example, does

crowding in the family home induce the members of the family to spend less time in their residence? Are the reading habits of school children influenced by the amount and the type of privacy they enjoy in their family homes? How are personality traits affected by the emphasis, at home, on either privacy or gregarious living? What housing conditions call forth psychotic and psychoneurotic adjustments and how? Research is needed also on the more generalized and "far" effects of housing items, for example, "happiness," "family cohesion" and "community stability."³ Investigations that relate specific housing features, as well as general housing goodness, to broad policy objectives are needed. Sustained attention must be given instruments of measure. Measures of small group morale, social position, and social participation have been developed and one has no difficulty finding measures of personality difference. Other measures which will record family cohesion, community or neighborhood morale, constructive citizenship and the like, however, remain to be developed. With such measures in hand, studies of housing effect can incorporate more detailed observation than has hitherto been possible, and comparative analysis of numerous housing situations becomes possible.

Home Adjustment and Family Housing

The provision of family housing, a necessity in every society, is also a social problem of the greatest significance in our own society. If, as some of our commonplace verse goes, "it takes a heap of living to make a home," it also takes more than

¹ The publications of the Committee on the Hygiene of Housing (American Public Health Association) are among the best on such procedures: Vol. I, *An Appraisal Method for Measuring the Quality of Housing* (APHA, 1945-1948, in 3 parts); Vol. II, *Planning the Neighborhood*; Vol. III, *Planning the Home for Occupancy* (Chicago: Public Administration Service, 1948 and 1950). For a critique of the method, see N. Demerath, "Measuring Housing Quality," *Journal of Housing*, February 1948, pp. 39-40.

² See, for example, *Urban Housing and Crowding, Relation to Certain Population Characteristics as Indicated by National Health Survey Data*. Public Health Bulletin No. 261 (Washington, D. C.: U. S. Government Printing Office 1941); Rollo H. Britten, J. E. Brown, and Isidore Altman, "Certain Characteristics of Urban Housing and Their Relation to Illness and Accidents: Summary of Findings of the National Health Survey," *The Milbank Memorial Fund Quarterly*, April 1940.

³ F. Stuart Chapin, "Effects of Slum Clearance and Rehousing on Family and Community Relationships in Minneapolis," *American Journal of Sociology*, March 1938, pp. 744 ff.; Raymond F. Sletto, "The Relationship Between Housing Standards and Mental Health," mimeographed report, Department of Sociology, University of Minnesota.

mere sheltered space, a specified number of rooms, equipment and gadgetry.

While the quality of family life depends on many things, housing is by no means the least important factor. House planning should be home planning. That is to say design, construction, and equipment should be conceived in relation to family life requirements. They should be regarded as means to the end of family home adjustment. Home adjustment is a continuum ranging from minimum to maximum friction and frustration in family living attributable to housing conditions. Before better standards for home planning can be formulated there is much to learn about home adjustment and the family-house nexus.

To understand home adjustment the family activities that are to be housed must be known.⁴ These family activities must then be analyzed for their location, space, privacy, and equipment requirements. The consideration of general family types in terms of population characteristics and minimum room needs is not enough. It is necessary to analyze the activities of many and varied patterns of family life.⁵ Questions of this order call for careful investigation: To what extent do the activities characteristic of a specifiable family-life pattern interfere with each other? Which of these activities complement each other and how? To avoid unnecessary work or movement of persons and goods in the household, should they be located near each other in the family dwelling? What activities should be isolated or separated from one another in timing or location?

⁴ Svend Riemer, "Family Life as the Basis for Home Planning," *Housing for Health* (Lancaster, Penna. The Science Press Printing Company, 1941), pp. 116-139; "A Research Note on Sociological Home Planning," *American Journal of Sociology*, May 1941; and "The Adjustment of Family Life to its Physical Shelter," *Research Study of the State College of Washington*, March 1941.

⁵ Milton Blum and Beatrice Candee, *Family Behavior, Attitudes and Possessions* (New York: The John B. Pierce Foundation, 1944).

Considered in such detail, family housing needs are exceedingly flexible and variable. Within the limits of the family budget, not all home activities can be accommodated equally well. Choice and compromise will be necessary. What choices and what compromises in the accommodation of home activities are conducive to more or less friction in family activities and relations? Which are "acceptable"? What are families' housing preferences, not in terms of physical features and gadgets, but in terms of the relative importance assigned to activities competing for consideration in residential design and construction? Here is a broad field of investigation that has been neglected. To come to grips with it a breakdown of family life situations and patterns is prerequisite. Some of the variables that might well be used in this analysis are suggested in the following.

(1) *Social Position.* The housing requirements of individuals and families differ, of course, with occupation, income, education, ethnic identity, and other positional determinants in the society or community of reference. Significant differences no doubt exist in patterns of social entertaining, the taking of meals, desire for privacy and leisure-time activities in the family residence. With regard to child care, sleeping arrangements, and housework, the differences in housing needs associated with position are perhaps less significant. Actually we have no definitive knowledge of any of these differences. Random observation tells us they exist. We have yet to learn with any precision what they are, and how important they are.

(2) *The Daily Rhythm of Home Activities.* Most rooms of the home go unoccupied during perhaps twelve of the day's twenty-four hours. In the daytime the housewife and the small children are the only occupants of the home. They tend

to use principally the kitchen and living-room. If the children are in school, and the housewife does her own shopping, coupled perhaps with community visiting and group life, the temporary emptiness of the home—or the temporary abundance of surplus space—will be even more striking. At night, the bedrooms alone are occupied, unless a bedstead is placed in either livingroom, diningroom or kitchen. Before, during, and immediately after mealtime, the family home is taxed to its utmost with regard to both space and equipment.⁶ Not only are the kitchen and dining space crowded, but the activities of dressing and relaxation put a maximum strain upon other facilities also. These are the crucial hours of maximum need during which the adequacy of available space and equipment and their design is tested most sharply.

(3) *Everyday Life and Special Occasions.* The family home cannot be planned exclusively for the routine of everyday life though our principal emphasis lies there. The emphasis given the accommodation of everyday routines at the expense of special days and special occasions in the home is actually a relatively recent development in residential design, promulgated in part by the architects. Housing facilities for special occasions may properly be reduced to better accommodate everyday routines. In fact, these facilities have been curtailed as American houses have become smaller. The question is, have not housing facilities for special occasions been so curtailed that family solidarity (reinforced by special celebrations), community contacts, and kin associations have suffered?

Middle-class families are especially strained in their attempts to crowd social entertaining into their private homes.

Their ambitions are apt to exceed their means. The housing requirements of "special occasions" are not wholly met by more and bigger livingrooms. Changes in other routines may be helpful. They can be accommodated by the temporary reassignment of rooms to fit the occasion. The livingroom that doubles as a dining-room and the master-bedroom which serves as a powder-room and coat closet for guests are well-known features in present-day customs of middle-class entertaining.

(4) *The Weekly Rhythm of Home Activities.* The housing needs of the family change considerably during the seven days of the week. The household activities vary according to a pattern which appears to be more or less uniform in all western countries, especially for the middle classes. At the beginning of the week, the home functions predominantly as a workshop for the housewife. As the weekend approaches, recreational home activities move more and more into the foreground. The emphasis shifts from the kitchen to livingroom, diningroom, and possibly to recreation room and bedroom-study combinations. For one set of purposes, it may be desirable to move the kitchen into the center of the floor-plan; make it spacious and well equipped, combine in it space for dining and for informal leisure-time activities. The emphasis upon leisure-time activities toward the end of the week may call for an entirely different arrangement. In the small-sized home, the livingroom may be expanded to such an extent as to make all other rooms—the kitchenette included—appear as attachments of minor importance.

(5) *Seasonal Fluctuations.* Seasonal changes of temperature, rainfall, humidity, and prevailing wind, correlated of course with residential location, make for variable housing requirements. Play

⁶ *Housing for Health*, op. cit., 128.

space for children need not be reserved in the home during the summer to the same extent as in winter months and in bad weather. The seasonal shift in family home requirements also depends on the available backyard, garden and neighborhood facilities. If garden space, playgrounds and parks are easily accessible, the seasonal evacuation of the family residence by active children will be more apparent than otherwise.

The recreational activities of other family members are also partly transferred to the out-of-doors. The living space of the family is extended to porch, backyard and garden. These may become the location of hobbies as well as routine activities otherwise carried out within the walls of the family dwelling itself. Informal gatherings of the family group alone or with friends may find more spacious and more pleasant accommodation on the porch or in the garden. Meals may be served in the open air, and some of the household activities may be shifted to the outside, thus challenging the dwelling and site designer to provide easy communication with the service centers inside the house.

In the wintertime, family life is more confined to the dwelling. Inadequate heating facilities reduce the amount of usable space. Hence the social importance of heating facilities. Note, for example, the large farm houses with numerous rooms little used in the winter and, correspondingly, the crowding of persons and activities in the few rooms which are heated.⁷

(6) *Social Change.* So far, variability of family housing requirements has been considered in terms of social position, cyclical conditions and recurrent events: hours, days, weeks, seasons of the year, family anniversaries and other special

occasions. The dimension of time also encompasses the phenomenon of social change. Housing requirements shift in time according to broad social trends which affect family life patterns along with many other phenomena. The modern urban family is predominantly a consumption unit. Economic production activities have been eliminated from the family home, and the elimination of still other activities continues. Certainly, education, recreation, and specialized leisure activities are affected.

The associational function of the family table, around which the entire family once gathered for all kinds of shared activities, has gradually disappeared. For many the dinner-hour is left as the only occasion at which the members of a family come together. This and other changes in family living have served to reduce the space needed for common activities, and to increase the space required for more specialized and individualized activities. Correspondingly, home planning has entered on two rather divergent trends which promise adjustment to these changes. One consists of a continuous increase of specialized home facilities adapted to the peculiar needs of our times; the other consists of the increased utilization of neighborhood facilities.⁸

In order to retain the family home as the center for educational and leisure activities, a children's playroom, a recreation room for adolescents, or study-bedroom combinations may be added which make it possible to take friends home and to entertain them in relative privacy.⁹ For many purposes it seems more suitable to arrange for facilities outside the family home. There are clubs, commercial entertainments and a

⁷ Ann Carolyn White, "A Delineation of Rural-Farm Housing Regions in New York State," unpublished thesis (Cornell University) February 1945.

⁸ Svend Riemer, "Sociological Perspective in Home Planning," *American Sociological Review*, April 1947.

⁹ Svend Riemer, "The Case for the Second Living Room," *The American Home*, September 1944.

growing number of neighborhood facilities. As this trend proceeds, the burden of activities to be squeezed into the individual family home is steadily lightened. In most strata of our society, lip-service is still given to the home-centered solution of the problem. But the trend of actual change unfailingly points in the direction of extended neighborhood and community facilities.

In dealing with the effects of social change on the housing needs of the family, it seems advisable to discuss this process in terms of *transfer* rather than of "elimination" of functions from the individual family home. It becomes increasingly necessary to analyze the family in the larger context of its relationship to outside agencies.

The architect is beginning to shift his attention from the design of the individual home to the wider problem of neighborhood and city planning.¹⁰ Social conditions have changed, making the family dwelling unit a rather artificial unit for planning purposes. The dwelling area (by whatever name—neighborhood, community, cell or super-block!), is more and more regarded as including, ideally, a relatively full complement of institutional services and facilities for many families.¹¹

Symptoms of social disorganization are apt to appear where the family dwelling fails to accommodate certain activities before these same activities have been provided for in the dwelling area. Once area facilities have been provided the shrinking functions of the family home need not concern us perhaps. Yet we

should know what differences there are as between the satisfactions and frustrations of participants in activities accommodated in the family home and in the dwelling area.

(7) *Patterns of Authority and Dominance.*

Influence, power, and authority are differently distributed within family groups. We refer to authoritarian, egalitarian, democratic, or individualistic types of families. Individual families vary considerably within these categories. For example, one observes democratic families in a population whose predominant family type is authoritarian, and vice versa. In formulating housing standards one needs to know how these differences in family structure make for differential housing needs and satisfactions. Different requirements are emphasized if the father or both parents, one child or all the children, impose their needs in the choice or construction of the family home.

Patterns of dominance are both socially and psychologically determined. The gradual change from overwhelming authority on the part of the father to more democratic arrangements in the American family is reflected in home planning and interior design. The downstairs study, library or office have almost disappeared. The pompous desk and chair as a space-consuming symbol of fatherly dignity and omnipotence has been replaced by the more simple secretary. Design and use tend to emphasize the intimacy of informal family living rather than patriarchal omnipotence. Dominance patterns are more flexible and open to individual solution than ever before. The father's privileges vary widely according to the degree of paternal authority he retains in the family group. The criteria and the sacrifices necessary in the design or choice of the family resi-

¹⁰ For early formulations of the problem see: Henry Wright, *Rehousing Urban America* (New York: Columbia University Press, 1935); Clarence A. Perry, *Housing for the Machine Age* (New York: Russell Sage Foundation, 1939).

¹¹ A full, though not entirely dispassionate introduction to this field of inquiry will be found in James Dahir, *The Neighborhood Unit Plan* (New York: Russell Sage Foundation, 1947). Also see: *Planning the Neighborhood*, Committee on the Hygiene of Housing of the American Health Association, (Chicago: Public Administration Service, 1948).

dence may differ according to patterns of influence, power, and authority.¹²

(8) *Personality Traits*. Though demonstration is lacking, differences in personality call for corresponding differences in housing. Relationships of this order are almost untouched by research. Some personality traits may conceivably prove more important determinants of housing preferences and wants than some of the demographic or economic factors now emphasized. If housing be a means to the ends of mental health and to good citizenship in a democratic society, better understanding of the house-personality nexus is indicated.

Certainly, home planning activities on a large scale cannot be expected to take extreme individual desires into consideration. The costs of deviation from acceptable model designs would prove prohibitive to all but the more affluent members of the community. For housing projects with lower-income occupants, the consideration of the personality range of the clientele is a challenge to greater differentiation in design.

(9) *The Family Cycle*. As families change in size and age, their housing needs likewise change, quantitatively and qualitatively.¹³ Family composition, housing space and requisite facilities seldom go hand in hand.¹⁴ Other needs than those for housing compete for the purchasing power available in the family budget. As a matter of fact, the need for

maximum housing services during "the peak years" in the family history comes at a time when food, clothing, medical care and education needs are also at their maximum.¹⁵ Housing by no means enjoys absolute priority in this situation. Housing adequate to family needs in the peak years as well as in "the emptynest" period simply does not exist in many places. Sacrifices for housing are forced on many families at the very time when their housing needs are greatest. To this situation, the individual family can adjust in several ways: (a) Purchase or rental of a dwelling unit expected to serve the needs at the peak of family growth. (b) Purchase or rental of a nucleus housing unit adequate for the limited needs at the time of family formation, but designed and constructed so as to facilitate additions to the structure as the family housing needs increase. (c) Mobility, i.e., a long-term housing plan for family living which takes into consideration the possibility of exchanging present quarters for others better suited to altered family needs later, including contraction as well as expansion.

Most families are bound to encounter repeated situations of housing maladjustment in the course of their life cycle. Temporarily, such maladjustments may be met by skillful reassignment of room uses, by crowding of sleeping-quarters, by using rooms for more than one purpose, and by separating when necessary simultaneous activities which interfere with one another. But the strain of maladjustment generally increases until the situation becomes unbearable.

The desire to house the entire life cycle of the family in one and the same residence, "the permanent home," is by no means universal, though its extensivity re-

¹² See a PH.D. project in sociology by R. O. Blood, Jr., *Family Living Patterns and Housing Livability*, University of North Carolina, 1952. This research treats family life "styles" ("emancipated" and "traditional") and social class orientation (and aspiration) as prime variables in housing livability. The subjects are 40 middle-class, two-child families occupying identical two- and three-bedroom apartments in an FHA-aided garden apartment project.

¹³ For a statistical account of the family life cycle and its changes between 1890 and 1940 see Paul C. Glick, "The Family Life Cycle," *American Sociological Review*, April 1947. And for a well-written and highly suggestive development of the cycle idea, see *Houses for Family Living* (New York: Woman's Foundation, 1948).

¹⁴ For the increase of home ownership with age see Paul Glick, *ibid.*, fig. 3, 173.

¹⁵ For a detailed empirical study see E. L. Kirckpatrick, Rosalind Tough and May L. Cowles, *The Life Cycle of the Farm Family*. Wisconsin Agricultural Experiment Station Research Bul. 121, Madison, 1934.

mains to be charted. In any case, this desire remains unfulfilled for most American families. Considerations of economy are at the basis of this condition. The permanent residence entails either waste or maladjustment at different phases of the family life cycle. If a home is chosen for maximum housing needs anticipated at a later stage of family development, this residence is apt to be too much for the housing needs at the time of family formation. Rooms will not necessarily stand empty, but there may be a much more generous assignment of rooms for specialized activities than is compatible with the family's finances. Similarly, waste of facilities is encountered in the later stages of the family cycle when a relatively large structure is occupied by an aging couple whose children have left the parental home for residences of their own.

To be sure, the period of maximum requirement will always force some crowding and undesirable interference upon family activities, at least relative to earlier or later phases of the cycle. A wide range of possible compromises offers itself to the family. There are rambling mansions which are intended to be fully occupied for a few years of family living only, while being carried as a wasteful overhead through the rest of the family history; and there are, on the other hand, small and compact homes which—if they are to be retained through the period of maximum needs—will impose inconveniences on the resident family.

To meet augmented housing needs, architects have worked out designs and construction methods which simplify additions to the main structure. There is, however, one great practical difficulty in adding to the family home. The burden of additional costs is apt to strike the family at the very time when, due to increased outlays for other items in the

family budget, financial means are restricted. In consequence, many of these planned-for additions never materialize.

The recourse to mobility as a means of home adjustment at different stages of the family cycles is quite common in the United States. This compels a broader view, a community view of building activities and housing conditions. With the residential well-being of the community in mind, one must view entire populations in mobility between residences of recently married and childless couples, through the child-bearing and child-raising stages, and finally to the dwelling units of aging couples and the temporarily unattached. From home planning narrowly conceived, concern must be shifted to larger areas of neighborhood and city planning to which little attention has been given as yet by the students of family life.¹⁶

(10) *Special Problems.* In addition to the research problems just suggested there are certain other problems which, though not universal, are nevertheless extensive and urgent in the contemporary American scene. For many families and many persons they represent serious difficulties in home adjustment. A better understanding of them is desirable for the purpose of formulating better housing standards. Take first the problem of roomers or lodgers. Lodgers are sometimes held to be so attractive from the economic viewpoint that detailed scrutiny of the actual situations and effects is called for. While no roomers might mean better housing, good housing should probably not be bought by sacrifices in nutrition, education, and recreation. What the family's gains and sacrifices may be, and what the unattached person living in a family home may gain or give up, is simply not known.

¹⁶ On the necessity of estimating differential housing needs see Alexander Block, *Estimating Housing Needs* (London: The Architectural Press, 1946.)

In view of the fact that the housing of the unattached is so largely on a lodging basis, more intensive research will be needed before standards regarding lodgers in the family dwelling can be formulated.¹⁷

Little is known about a housing condition that is more talked about today than it ever has been in the past, the condition of *doubling up*.¹⁸ Refined empirical analysis of the presently crude category, "doubling up," may well lead to startling results, causing embarrassment to apodictic statements about the all-out detrimental effects of double family living. What about the grandparents who bestow upon young parents the blessing of "built-in" baby-sitters by living in the same home as the grandchildren? If a minimum of psychological fixations prevail and if there is enough emotional maturity on the part of all concerned, the combined household probably does not deserve to be put on the undesirable list.¹⁹

Desirable cases of doubling-up may be in the minority. Whether it is a sizeable or a negligible minority, however, will not be known until more detailed survey materials are provided. For all we know, the parties to unsatisfactory doubling-up may be more vocal than those who have worked out mutually beneficial arrangements.

¹⁷ "Recommendation: Therefore, dwellings should be planned on the assumption that households constituting primarily of married couples will not ordinarily include lodgers." "Exclusion of lodgers is considered essential for families with young children." *Planning the Home for Occupancy*, op. cit., pp. 2-7.

¹⁸ A sample survey, conducted in February 1945 by the Bureau of the Census showed "a total of 3,125,000 secondary families in the United States living in the households of 2,925,000 primary families . . . Thus, 1 out of every 13 of the 37,900,000 primary families in February 1946, had at least one secondary family in the household." *Population*, Series P-S, No. 15, February 1947.

¹⁹ *Residences for Older Women* (Welfare Council of New York City, 44 East 23rd Street), June 1937; Ruth Shonle Cavan, "Old Age in a City of 100,000," *Illinois Academy of Science Transactions*, 1947. pp. 156-170.

Partnership-families, households of two or more adults, related or unrelated, but not including a married couple, comprise another special case worthy of attention along with the other housing arrangements of unattached adults.

More and more attention to the housing of the aged may be expected. By what criteria should the aged be housed in separate dwellings or together with their married children? Should they be accommodated in separate neighborhoods and housing projects designed wholly for their rest and quiet?

Without intensive social research, housing practices in the case of the aged will continue to flounder haphazardly between segregation and intermingling, common services and separate services. Costly trial and error might eventually lead to sound practice, but the waste of trial and error can be reduced by research.

Simple preference studies are of little avail, where the crucial problems of renting versus home-ownership²⁰ and the somewhat overlapping problem of single-family dwellings versus apartments is under consideration. Numerous surveys of preference have thrown overwhelming votes against renting and against apartment-house living in the American scene. However, renting and apartment house living are not synonymous, and each consists of variable configurations of housing facilities and services.

The problems suggested above merit particular scrutiny with mobile populations in mind. There are millions of especially mobile families and individuals in all income strata whose housing needs could best be served by a combination of facilities and services at present associated sometimes with rental housing, sometimes with home ownership, some

²⁰ John D. Dean, *Home Ownership: Is it Sound?* (New York: Harper & Bros., 1945).

times attached and sometimes unattached dwellings. The same is true for many home-owners today who accept crushing ownership obligations in order to obtain advantages that are not offered on a rental basis. But the best combinations of housing features can be ascertained only by research that probes into sufficient detail of housing conditions and consumer reactions to yield conclusions that are not influenced by housing stereotypes and conventions of the present housing market.

The Architect's Dilemmas

What has been termed the home adjustment process in the preceding pages may also be viewed as a series of decisions related to design and production, use and occupancy. Let us, in the remainder of this paper, direct attention to the points of decision and dilemma which confront the residential architect, given the patterns of American family life and given the limits set by the economy generally and by family budgets in particular.

Everything architects and builders do tends to represent a compromise between diverse and conflicting wants or needs for better or different housing facilities, and between these wants and limited economic means. The points of decision and compromise are numerous. But in our society there are three of particular importance: (1) privacy or room space, (2) distance or proximity in floor plan, (3) equipment or space. For each of these points of compromise we may set up a tentative "principle" that should be analytically useful for the architect and the social scientist.

Privacy or Room Space. It is the task of architect and builder to maximize opportunities for personal privacy and separation of uses up to the point where individual rooms must be reduced to

undesirable size. The prospective buyer or renter often considers the rooms as more or less standardized units, and the house, correspondingly, as simply a 2-3-4-5-10-room house. Such simplification can be grossly misleading. It obscures important issues for both consumer and researcher. Both the size of each room and the number of rooms, must be considered simultaneously. If, in the study of relationships, attention were given only to the number of rooms, the practical consequence of such isolated studies might be to reduce rooms to disagreeable and unusable size.

The adaptability and usefulness of each family home, given a total floor space, reaches an optimum at a certain relationship between privacy and space. This relationship, however, varies considerably with family type, cultural and personal preferences. In more concrete terms one must ask, for instance, whether it is preferable to furnish a dwelling unit of given size with either a large kitchen-livingroom combination, or whether a need for privacy and the separation of activities indicate a small kitchenette and provision for a separate livingroom of more limited size.

Heterogeneity of the occupants must be kept in mind here as in other connections. For example, the white collar group in Sweden preferred more privacy than manual laborers who, for their part, showed tendencies in the opposite direction.²¹ Prevailing habits and expressed preferences, of course, are not necessarily sufficient grounds for the architect's final decision. The architect may feel challenged to provide for the housing needs of the future rather than for those established by contemporary preference. He may feel called upon to anticipate changes in the desire for more privacy resulting from a diffusion of

²¹ *Housing for Health, ibid.*, p. 121 ff.

educational and specialized recreational activities, or by other individualizing influences of our urban civilization. The architect's or builder's anticipation of the future, however, should not be based on ingenious hunches or social prejudices. It should be based upon conclusions drawn from reliable social research.

During recent decades rising costs per square foot of sheltered space have necessitated what seems to many to be the utmost in space restrictions. A great deal of experimentation has been going on in regard to the accommodation of both privacy and space in compact residential structures: Numerous attempts have been made to break down the seemingly rigid alternatives between the provision of either space or privacy, fewer large rooms or more small rooms in the family dwelling.

By various devices architects seek to resolve the dilemma of privacy or room space. Instead of complete walls, more limited "half-way" partitions are used to create relatively isolated corners within one and the same room. One hears "Let space flow into space,"²² an admonition which in practice applies particularly to the expensive homes of the upper classes. That area of the residence which is set apart for dining, entertaining and leisure activities is especially apt to be divided in this manner. Relative privacy is also achieved by curved, collapsible and movable partitions, by alcoves and similar arrangements which do not impair the impression of spaciousness, and which also permit opening-up and combining the entire space when needed. The aesthetic effects of such arrangements have been emphasized but the underlying economies should not be neglected.

²² "It is indeed a characteristic of the 'modern' trend in German and French house planning, that the old conception of rigid partition walls and permanently restricted room areas has been largely abandoned." Henry Wright, *Rehousing Urban America* (New York: Columbia University Press, 1935), p. 132.

The arrangements mentioned above recommend themselves particularly when a less stringent separation of leisure activities is called for. Whether ideal conditions for study or the enjoyment of music can be obtained in this manner, for example, is certainly doubtful. But, if supplemented with adequate individual study-bedroom combinations "upstairs," a rather loose organization of the space provided "downstairs" for various social activities may serve the occupants well. Relative privacy does not offer satisfactory noise insulation or guard against social interferences in matters of private hygiene and retirement as required in our culture.

Kitchen-livingroom combinations frequently achieve a relative division by some sort of counter arrangement. This serves to avoid a frank identification of kitchen and livingroom space, commonly regarded as too informal or as a prestige risk. It also has the considerable advantages of less distance coupled with hearing range between the dining space and the center of food preparation. With the elimination of maid service even from well-to-do homes, the serving of meals, snacks or drinks has become an entertainment task to be performed by the housewife or the husband. With the housewife doing the work, a remote kitchen serves to interrupt the conversation of the group, and separates guests from host and hostess. For this reason the host's work place (kitchen) and the guest's place (livingroom, diningroom) may well be joined. However, cooking and cleaning operations and the discarding of waste materials are sufficiently annoying in noise and odors to pose a difficult problem for the architect and his client.

The ingenuity of the architect is tested by the difficulty of installing temporary and easily removable partitions with

satisfactory insulating qualities. With varied mechanical means at his disposal the modern architect is groping for solutions to this problem. Alternate accommodation either of the desire for privacy or the desire for communication can be applied usefully to many different home activities.

The choice and arrangement of furniture is also frequently used to serve the need for relative privacy. Large, concentric patterns of furniture arrangement—focussed on the fire place—may be replaced by small and separated groups of furniture. There is a close relationship between furniture placement, living-habits, and room-size. Study is needed of the arrangements and uses of furniture by different social groups in the past and present.

Distance or Proximity. Within the limits of the total space and the broad design of the structure, it is the task of architect and builder to increase distances between rooms until the advantages of separation are outweighed by the disadvantages of longer routes and movement. Distance as well as walls produce separation of activities, distance being the more effective device wherever something like absolute privacy is sought. Thus, a bathroom adjacent to a bedroom, or the kitchen next to the diningroom may be sources of friction and maladjustment of activities avoidable only by more than wall separation. On the other hand, there are advantages in proximity, even the proximity which also is responsible for annoyance and disadvantage. To save labor the distance between the kitchen and the diningroom, and if no special dining space is offered in the family home, the distance between kitchen and livingroom may be reduced to a minimum. While bathroom and bedroom should not be directly adjacent perhaps, neither should they be too

remote from each other if nursing and childcare is to be done with greatest efficiency.

Separation by distance is often impeded in today's compact residence. In old houses and tenements, it was easier to separate activities by distance because houses were commonly designed to fit long and narrow city lots. Rooms were in sequence with a hall on one side and the outside wall on the other. In the compact structure of today all rooms are held closely together in a tight cluster. The disadvantages of the tandem arrangement are well known. It involves waste motion in traffic and transport along the tandem line; and there is waste space in the long hallway which connects the individual rooms with each other. In the railroad flats of cheap tenement sections, the hall was omitted and the tenant found himself in a string of rooms, each with cross-traffic and none with privacy. The oblong building is also uneconomical for heating. Today, the tendency prevails of substituting insulation for distance wherever the separation of home activities is required or desirable.

The planning problem with regard to the distance or relative proximity of different rooms extends into the wider problem of internal communication. It takes a rather detailed interpretation of the routine of family home life to arrive at a full understanding of prevailing needs and wants.

A practical list of "Essentials" and "Desirables" was published some 16 years ago in the *Architectural Forum*.²³ It is helpful in that it expresses the requirements directly in terms of design alternatives.

(Essentials)

1. Livingroom not reached by a passage through any other major room?

²³ "From Rent to Space," B. J. Harrison, H. D. Whitney, and Clothiel Woodward, *Architectural Forum*, July 1936.

2. Livingroom used for dining not separated from kitchen by any other major room?
3. Kitchen convenient to dining space?
4. Chamber not reached by passage through any other major room except livingroom or dining space?
5. Bath reached from all chambers without passage through other rooms?
6. Bath accessible from all rooms without passage through chamber?

(Desirables)

1. Livingroom not the only passage to other major rooms?
2. Kitchen accessible for service directly to entrance without passage through other rooms?
3. Bath and bedroom hall located so that it may be isolated?
4. Bath access from chamber not across apartment entrance circulation?
5. Hall or foyer giving direct access to all major rooms?
6. Circulation direct and compact?

Without systematic research which elucidates attitudes and home life routines of intended occupants the compilation of a check-list should perhaps not even be attempted. Compiled assertively by the "housing-expert," the check-list may hamper genuine functionalism in design because of a tendency to disregard human heterogeneity in favor of rather standardized requirements. There remains little room for flexible adjustments to differential housing needs where definitive rules are laid down. Under the circumstances, one may expect better guidance from a relatively simple and flexible principle.

It would be possible, given the ideal communication arrangement, to reach every room directly from the main entrance without crossing another room. In all but a few instances, however, the ideal is probably unattainable. Direct communications from the entrance door may require a wasteful amount of space for the hall. The compactness of design may suffer; or the traffic through one general hallway may be annoying to the

routine of family living. It seems particularly desirable to separate from each other two flows of communications: that between bedroom, bath and dressing space, on the one hand; and that between entrance door, kitchen and livingroom, on the other.

In arranging interior communications, consideration has to be given to the placement of doors. To facilitate circulation they are desirable unless they (1) interfere with other doors and windows, (2) cause undesirable traffic crowding, (3) interfere with the placement of furniture. Commenting on (2) one can say that, for the sake of economy, hall and stair space should generally be kept to a minimum. To separate the traffic lanes between bedrooms and bathroom, and between the main entrance and the livingroom, however, a more generous solution will sometimes be justified. Also, it will often be necessary to sacrifice doors and resort to crossroom traffic because of the crowding and jamming of simultaneously opened doors in the hallway. With regard to (3) above, attention is directed to the fact that the advantage of doors may be offset by the disadvantage of too little wall space for furniture placement. The same is true of windows.

Equipment or Space. It is presently the task of the American architect and builder to limit total dwelling space until increased interior equipment and lower housing costs no longer offset the growing tension and maladjustment caused by crowding. In our culture the economics of housing compel many to live in relatively limited space—limited, say, compared with conditions in the 19th century. Adjustment to overcrowding, under the circumstances, is facilitated by ingenious home planning and equipment. Growing outlays for equipment have been paralleled apparently by decreasing ex-

penditures for space. Though the efficiency kitchen with its mechanical equipment and well arranged storage is widely praised, its very smallness may be a disadvantage in some ways. Built-in or convertible beds make it possible to use one and the same room for different purposes, for sleeping at night and for study, leisure, relaxation and similar functions during the day-time. Due to the trends of relative cost for either sheltered space or equipment, a continuous decrease of the total space of the individual dwelling unit has occurred. However, an ingenious interior equipment often mitigates the inconveniences of this condition.

This trend has had its epitome in the so-called model apartment where the kitchen-in-a-closet, built-in beds, folding tables and a considerable amount of storage space in the wall make it possible to shelter a household in minimum space. These model apartments are acceptable in their extreme development only where land values are high and where the costly steel construction of the skyscraper has raised the rent per square foot to the utmost. True, this environment may never be satisfactory for full

family living. There is no place for children in a home that requires minute rationalization of all routine activities.

The lack of space no doubt has further indirect effects on family living and home activities. It apparently forces all members of the family to adhere closely to rigid routines and disciplines of everyday life. An economic corollary has been the continued expansion of relevant lines of production, advertising, and apparently unlimited consumer wants.

Even in rural housing, the sacrifice of space for equipment is quite noticeable. For years, compromises have been typically in favor of equipment and against square-footage as such. It has seemed indeed that "mechanization takes command."

Family needs for housing are extremely variable. Tradition, custom, and free market play are not sufficient guides to guarantee home construction activities to answer this complex pattern of needs. Research must help to bridge the gap between supply and demand. This article has tried to outline the scope of problems to be covered by such research in the livability of housing.

The Economic Basis of Public Policy For Motor Transport

By DUDLEY F. PEGRUM*

I. Introduction

THE phenomenal development of land transportation in the nineteenth and twentieth centuries was primarily the story of the invention of the steam locomotive and the growth of the railroads. So much was this the case, that land transport, except for strictly local service, was almost synonymous with rail transport from 1850 to 1920. There appeared to be no other means to challenge its complete supremacy.

The invention of the internal combustion engine in 1884 with the first workable automobile in 1887, was destined, however, in the next half-century to revolutionize transportation. It was, in five decades, to provide a means of land transport that expanded transportation services enormously, changed the entire pattern of living and increased intercommunication and mobility of population beyond any previous conception. Furthermore, the development of the use of the automobile introduced an alternative source of supply for a wide variety of transport services such that transportation, in many lines, has become one of the most competitive fields of endeavor in the economy.

From a mere four motor vehicle registrations in the United States in 1895, and four factory sales, automotive equipment increased during the next half-century such that in 1949 total motor vehicle registrations in this country amounted to 44,120,243 of which 36,292,703 were automobiles, 134,971 busses and 7,692,569 trucks.¹ The total investment in motor transport for the same year was

something over \$35,000,000,000 as compared with \$23,000,000,000 for railroads. A recent estimate places the investment in highway facilities, in terms of construction costs, at \$28,000,000,000 down to the end of 1949² with total highway expenditures for the latter year alone amounting to \$3,300,000,000.³

The total estimated ton-miles of freight carried by trucks and truck-combinations on the main rural roads of this country was 89,000,000,000 in 1949 as compared with 28,000,000,000 in 1936.⁴ Inter-city motor trucks accounted for 1.67 per cent of the revenue ton-miles of freight in this country in 1928, while the railroads moved 77.56 per cent.⁵ In 1948, the distribution was 8.69 per cent for trucks and 64.2 per cent for railroads.⁶ In California, where freight traffic moves predominantly by motor vehicles, 20.9 per cent of the gross operating revenues from the transportation of property went to the railroads and 73.7 per cent to the highway carriers.⁷

Despite the magnitude of motor transport as a whole, it is still essentially an industry of small scale operations. Of the total of 20,998 Class I, II and III motor carriers of property reporting to the Interstate Commerce Commission in 1947, 2,097 or 9.99 per cent earned 67.92

¹ *Study of Domestic Land and Water Transportation*, Hearings, Subcommittee on Domestic Land and Water Transportation, U. S. Senate, 81st Cong., 2nd Session, Washington, D. C., 1950, p. 940.

² *Ibid.*, p. 148.

³ *Ibid.*, p. 148.

⁴ *Ibid.*, p. 950.

⁵ S. Daggett, *Principles of Inland Transportation*, rev. ed., (New York: Harper and Bros., 1934), p. 5.

⁶ *Annual Report*, Interstate Commerce Commission, Washington, D. C., 1949, p. 15.

⁷ *Annual Report*, California Public Utilities Commission, 1950, pp. 147-148.

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per cent of the revenues, while the remaining 90.01 per cent earned 32.08 per cent of the revenues.⁸ The California Commission estimated that, in 1946, 55 per cent of the carriers reporting to it earned less than \$5,000 each per year in gross revenues from carrier operations.⁹

It is evident that this new form of land transport has, in the course of a little more than a quarter of a century, risen from a position of comparative insignificance to that of a major industry and a major transportation agency, indispensable to the economy of the country. It would appear that monopoly based upon technological conditions has been ended over an ever-widening area in transportation for as far as one can see into the future.

The structural changes in transportation in the last quarter of a century have imposed a compelling necessity for re-orientation of both regulatory policy and private management to a radically new situation in the whole field. The traditional patterns of thinking on public policy need to be re-examined by legislative bodies, regulatory agencies, the suppliers of transport services and shippers, in the light of the completely new technological and economic situation in transportation.

Today, however, the situation is totally different. Land transport cannot be regarded as a homogeneous industry in any respect. It cannot even be regarded as an industry. Instead it is a group of industries composed of agencies such as railroads, airlines, pipe lines and automotive vehicles. The only significant thing they have in common is that they offer facilities for the movement of goods and persons.

These different agencies have diverse economic characteristics. They supply many different kinds of services, some competitive, some complementary and some quite different. They offer these services under markedly different technical conditions and very different market conditions. The consequence is diverse economic characteristics as they relate to costs, supply of services and facilities, and organizational structure.

As was stated above, transportation is frequently regarded as a natural monopoly. Railroads have almost invariably been classified in this category as also have public utilities such as gas, water, electric light and power, and telephone.

The word "natural" as it is used in this connection refers to the fact that monopoly emerges from the economic characteristics of the industry in question and that competition is forced to play a very subordinate role in the fixation of prices to be charged for the particular type of services offered. As one economist puts it with reference to railroads: "Competition fails to establish a normal level of rates sufficiently remunerative to attract the additional investments of capital that recurrently become necessary."¹⁰

There are several reasons why monopoly is natural to certain industries. Capital has to be invested in amounts which are large relative to the market opportunities available for the goods or services that are to be produced. Capital costs therefore form a relatively large part of the total costs of production and addition to the plant will involve a large proportionate increase in capital investment, and will necessitate a large prospective increase in the market. A railroad, for example, has to make large

⁸ Interstate Commerce Commission, Bureau of Transport, *Economics and Statistics Revenue Ton-Miles and Passenger-Miles of Class I, II, III Motor Carriers*, Statement No. 490 (Washington, D. C., 1949), p. 18.

⁹ 48 California Public Utilities Commission 62 (1948), 71.

¹⁰ E. Jones, *Principles of Railway Transportation* (New York: The Macmillan Co., 1925), p. 91.

initial outlays to build a single-track line and acquire the necessary terminal facilities to operate it. When that plant is utilized to capacity, double-tracking will require a large additional investment which cannot profitably be made unless there is prospect of a large increase in traffic. Expansion of this type entails difficult problems of market anticipation because the facilities will have to be built well in advance of market opportunities. In the meantime, the traffic which is available will have to bear the burden of keeping the railroad in operation until the new traffic has been built up. If instead of double-tracking, a new railroad were to be built, an almost complete duplication of facilities would be necessary and the immediately available traffic would be inadequate to give either road a profit. In addition, the economies which would be available from such things as running trains in opposite directions at the same time would be unavailable.

Then there is the fact that much of the investment that has been made is specialized both as to functions and as to markets. Railroad tracks are only useful where they are laid and cannot readily be turned to other areas if the markets shift. In addition, they have little use except for supplying railroad transportation to a geographically-fixed area.

Natural monopolies are also characterized by a concomitance of production and consumption. That is, the services must be consumed in direct conjunction with the production facilities. This results in the absence of what is known as shopper's technique. The consumer cannot shop around because no other supply is readily available to him. This is especially true of public utilities. The consumer is forced to take the services offered by a particular supplier. Otherwise, he must go without or move.

The facilities of two suppliers are not available to him because it is too costly for both to supply the equipment necessary to be ready to serve. At the same time producers can serve only those whom they are able to contact with their production facilities. The physical area served by the plant constitutes the limits of its market and it cannot readily change those limits because of the extreme immobility of its production facilities.

In other words, concomitance of production and consumption, together with relatively large amounts of investment in plant that is specialized both geographically and functionally makes the presence of more than one producer in most markets impossible. Thus, direct competition is absent in most of the markets and readily available alternatives or substitutes are not usually present. For these reasons, it has long been recognized that direct competition over the entire range of output of natural monopolies is an unsatisfactory way of trying to secure reasonable prices. As a consequence, monopoly in particular markets has been accorded public sanction and even protection.

The utilization of the internal combustion engine in the field of transportation has radically altered the technical and economic structure of transportation. It is no longer composed largely of natural monopolies. On the contrary, the economic features which characterize natural monopolies are almost completely lacking in the newer agencies which have emerged. The technical units are relatively small and may be very small. Operations may be started with a very small investment and expansion may be made with very small increments of investment in direct and almost immediate response to the growth in traffic. Most of the facilities are not highly specialized or

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unalterably committed to a particular market or geographic area and they can readily be shifted to any other market. Physically, the highways or routes are available to all who wish to use them. Alternative sources of supply can readily be made available to the buyer or consumer. There is no absence of shopper's technique; consumers may even supply their own facilities and do so a great deal of the time. Economic limitations on the additions to facilities are very slight because small increases in traffic increase the need for additional equipment, at least within very narrow limits, and these additions may be made in small units. Existing facilities can be completely utilized except within narrow limits, and additional traffic can be accommodated only by acquiring additional motive power. This will not result in an appreciable lowering of the average total unit costs of output, since the additional output comes as a result of the incurrence of additional costs that are largely proportionate to output. Mr. Bonavia expresses this by saying: "When the internal combustion engine was sufficiently developed it became possible to enter the business of carrying goods with a very small initial investment, building up the business by reinvesting profits. The qualities necessary for success were largely similar to those required in the tramp shipping industry. The lorry, like the tramp steamer, often competes for freight under, it has been said, 'conditions of almost classical simplicity'."¹¹

Evidence supporting the foregoing evaluation of the economics of motor transport is afforded by studies which have been made of the cost characteristic of motor carrier operations. The Cost Section of the Bureau of Transport Economics and Statistics of the Inter-

state Commerce Commission has made some elaborate studies of cost behavior for both railroads and motor carriers.¹² These were made for the purpose of examining the relationships of fixed to variable costs for different carriers and for varying conditions of operations. They endeavored to portray the basic principles underlying transportation costs and the relation of those costs to rate-making.

The study on motor transport involved a wide sampling of the statistics available and an extensive analysis of operating costs under varying lengths of haul in different regions of the country and under different traffic densities. One analysis, based on data of Class I common carriers of general freight in the Central Region in 1943, involving an average haul of 300 to 349 miles, showed that on the average 93.6 per cent of the costs varied directly, and proportionately, with the traffic while the remaining 6.4 per cent did not vary with the traffic; that is, they were fixed regardless of traffic.¹³

The conclusion drawn for the study as a whole was that for Class I general commodity carriers, between 90 and 100 per cent of the operating expenses were directly proportional to output. This contrasted with long-run rail operating costs which were estimated to be between 70 and 80 percent variable if investment was excluded. But only 50 to 70 percent of rail investment is variable, according to this study, which means that the variable expenses of railroads are a much lower proportion of total expenses since railroads have a very heavy investment.

The contrast in the variability of costs between rail and motor carriers is ex-

¹² Interstate Commerce Commission, Bureau of Transport Economics and Statistics, *Explanation of the Development of Motor Carrier Costs, Statement No. 4725* (Washington, D. C., 1949), p. 103.

¹³ Interstate Commerce Commission, Bureau of Accounts and Cost Finding, *Explanation of Rail Cost Finding Principles and Procedures, Statement No. 2-48* (Washington, D. C., 1948), p. 88.

¹¹ M. R. Bonavia, *The Economics of Transport* (New York: Pitman Publishing Corp., 1947), p. 66.

plained by the fact that fixed costs are present in rail maintenance-of-way expenses and in the capital costs resulting from the investment in road property. The corresponding roadway costs for motor carriers are distributed on a "use" basis through gas taxes and license fees, and, insofar as the motor carriers are concerned, they become proportional to the traffic carried.¹⁴

The operating ratios of rail and motor carriers reflect the same situation. Where fixed costs are high and the costs of capital a large part of the total, the operating ratio must be relatively low if the operations are to be profitable. If the fixed costs are low the reverse will be true. In 1947, the operating ratio for Class I railroads was 78.27 percent; in 1948, it was 77.26 percent, while in 1941 it was only 68.53 percent. The operating ratio for Class I motor carriers of property was 95.1 percent in 1948 and 93.2 percent in 1947. It averaged 96.4 percent for the eight-year period from 1940 to 1947.

Another test, which supports the two which have just been given, is afforded by the ratio of gross revenues from operations to the total capital investment, or the turnover of capital. The turnover of capital for railroads is about once every three years; or, to put in another way, the gross revenues from operations of railroads typically constitute annually about $\frac{1}{3}$ of the capital investment. For electric light and power and gas utilities, which have very high fixed costs, the turnover is once in five to six years. It is even as low as once in 10 years for some hydroelectric plants. For steel, the turnover is about once in every one and a half years, while for petroleum it is about once a year. For Sears-Roebuck and Co., it was almost 3 times in 1948 and $2\frac{1}{2}$ times in 1949.

¹⁴ Ford K. Edwards, "Cost Analysis in Transportation," *American Economic Review*, May 1947, p. 453.

The turnover for Class I motor carriers of property was approximately 3 times in 1948. It was almost the same for Class I motor carriers of general freight engaged in intercity service in 1948. Although individual carriers necessarily varied somewhat from this over-all picture, the variations from the average do not seem to have any correlation with the size of the individual carriers.

The cost features of motor transport, and especially motor trucking transport, bring out clearly the fact that, as an industry, it possesses those economic features which characterize highly competitive industry. It does not have to provide its own highway, where the elements of fixed costs loom large. Instead, it is able to use the highways in which the investment is provided by public funds. The carrier's contribution to this investment, or the fixed costs arising therefrom, is made through various kinds of taxes which are largely dependent upon the amount of use made of the highway by the individual carrier. In other words, from the standpoint of the carrier, the highway costs are variable costs. It is the state which has to take the responsibility for the fixed costs. Terminal costs are relatively low in motor transport and in the main have the same cost features for the individual carrier as do the highway costs, and for the same reasons.

The equipment is highly flexible because it can be operated in relatively small units. Its mobility on the highway eliminates the necessity of rigid scheduling which the limitations of rail trackage impose on railroads. Then, too, the equipment can be moved from one highway to another with very few impediments. In other words the equipment can follow the traffic. Finally, the small size of the operating units gives an ex-

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tremely high degree of adaptability of plants to the volume of business or traffic.

II. Development and Assumptions of Present Policy of Regulation

Public policy on the regulation of transportation in the United States emerged in the field of railroad transportation for two principal reasons. First of all, competitive forces were unable to afford reasonable safeguards against grossly discriminatory practices. In the second place, lavish public aid and lack of anything resembling adequate rules for private financial accountability resulted in an array of abuses, bankruptcies, and losses to the investing public.

Competition, by itself, is an inadequate safeguard for the public in the field of railroad transportation because of the economic characteristics of the industry. These characteristics, which make railroads natural monopolies, impose such severe limitations on the operation of competitive forces among railroads that, in the absence of other checks, monopolistic practices prevail. There is simply no other way that management can behave except as a monopolist. Competition over a wide range, both as to geography and services, is not possible because of the excessive costs of providing such competition.¹⁵ When public policy compels or encourages extensive over-all competition among railroads or prevents private efforts to limit or eliminate it, ruinous competition with all of its undesirable results emerges. Public reliance on transportation, but especially its reliance on the services of a particular railroad, necessitates public intervention as a substitute for the deficiencies of competitive checks and compulsions.

The inadequacy of competition in railroad transportation also manifests itself

in another way. The strategic monopoly position and great economic power of railroads has made it possible for them, if uncurbed by legislation, to dominate other forms of inland transport. This has happened on occasions in the past and would undoubtedly have a significant influence on the transport structure of the country today, if railroads were allowed to acquire other transportation agencies at all extensively. If thoroughgoing competition within the railroad industry itself were possible such a situation would not arise.

This does not mean that competition is insignificant or unimportant among the railroads of this country. On the contrary, it is one of the major considerations to which management must continuously give attention. It may even be excessive to the point of being ruinous if uncurbed. Taken alone, however, it is an inadequate means for determining relative prices and may even be inadequate for the determination of reasonable over-all revenues. This would be especially true if consolidation were developed so as to bring about regional systems.

The second factor which led to the regulation of railroads was lavish public aid coupled with the lack of anything resembling adequate rules for private financial accountability. Public aid, on the scale and in the fashion it was administered, led to the expansion of railroad facilities far in advance of the demand for services which could support those facilities. It frequently encouraged construction for the purpose of securing profits from public aid rather than from traffic prospects which would justify the investment. The financial scandals and exploitation that, in too many instances, accompanied this sort of development brought about widespread public demand for redress. Regardless of where the responsibility for the difficulties lay,

¹⁵ These remarks as especially well illustrated by electrical, gas, water and telephone utilities. They do not apply to radio.

public opinion was bound to demand severe curbs on the industry with which the difficulties were associated. Public attitudes that developed in connection with the emergence of the railroad problem gave rise, in the course of time, to the idea that similar developments should be forestalled in the newer means of transport by regulatory policies that would anticipate the rise of the newer agencies to positions of significance.

Regulatory policy, the first manifestation of which on the federal level was the Interstate Commerce Act of 1887, evolved over the ensuing thirty-three years into the Transportation Act of 1920. With this legislation, the Interstate Commerce Act became the framework of thoroughly comprehensive railroad regulation. Government control was erected on the theory that the railroad industry was to be treated as a regulated monopoly. As a consequence, the Interstate Commerce Commission was afforded detailed authority over railroad rates coupled with the duty of seeing to it that the railroads as a whole earned a fair return, if that was possible. It was felt that a living wage was as necessary for a railroad as for an individual and that the power of the Commission to restrict profits should be matched by the obligation to see that the necessary amounts were obtained. There was, however, no guarantee of a fair return.

Approval of the Commission was required before a railroad could issue new securities and consolidations were to take place only with the consent of the Commission in accordance with a plan which the Commission was to prepare. Any other form of acquisition of control of one carrier by another required Commission sanction. New construction of additions and extensions could be made only after a showing that present or future public

convenience would be served by it. Similarly, certificates had to be obtained before all or any portion of a line could be abandoned. The Commission was also empowered to compel a railroad to extend its lines if public interest demanded it.

It will be seen at once that this legislation was both protective and restrictive on the railroads. It was protective in that it imposed severe limitations on the possibility of one carrier extending its facilities into the geographic area already served by another. It was restrictive in that it severely limited the initiative which management could exercise, especially in rate adjustments and rate increases. It divided authority without, however, dividing responsibility. The Commission had exceptionally wide powers to impose restrictions but it was the railroads that had to assume the financial responsibility for the restraints, with literally no recourse if the results proved unsatisfactory.

The Motor Carrier Act of 1935 was really an extension of the Interstate Commerce Act with no change in the underlying philosophy of regulation as it applied to transport and no recognition of the fact that the transport structure had been changed so radically that, whatever validity may have rested in the previous legislation, under previous conditions, it was no longer applicable. In fact, the depression, the plight of the railroads and the clamors of many motor carriers, served only to reinforce the idea that competition should be restricted¹⁶ and that transportation should be treated as a regulated monopoly.

So far as common carriers by motor were concerned, the legislation governing them was basically the same as that

¹⁶ *Domestic Land and Water Transportation*, Progress Report of the Senate Committee on Interstate and Foreign Commerce, Senate Report No. 1039, 82nd Congress, 1st session, Washington, D. C., 1951, pp. 6-7.

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which governed the railroads. The fact that motor transport rests on a very different technical foundation, which makes it possible for individuals to operate their own vehicles, and as small technical units, makes it impossible to regulate all motor transport in the same way that all rail transport can be regulated. This accounted for the principal differences in the legislation. For that part of the industry, however, which came under Commission control the idea of regulated monopoly prevailed.¹⁷

The contradictions and inconsistencies that have resulted from public policy that did not grasp or did not take into consideration the different economic characteristics of the various agencies it was trying to regulate are repeated in the Progress Report of the Senate Committee and in the bills which have been introduced into Congress based on the recommendations contained in that report. Although the committee was very critical of present policy that regulates "competition in the interest of and for the protection and promotion of the competing carrier,"¹⁸ and although it stressed the importance and desirability of competition,¹⁹ it proceeded to make recommendations that would impose further restrictions on the free play of competition in the motor carrier field than now exist. It would extend regulation to a vast area of non-regulated carriers, impose much stricter limitations on contract carriers,

prevent the leasing of private vehicles for return loads and impose restrictions on leased owner-operated vehicles. The latter proposal is based on the reasoning that "trucking companies are able to reduce costs substantially and therefore can and do cut rates below compensatory levels,"²⁰ and "the purpose of regulation, in addition to preventing an over-supply of transportation, was to protect common carriers supposed to serve the public generally."²¹ To add to this record of restriction the committee proposed that, "consideration should be given to the feasibility of extending transportation excise taxes to private carriage of an interstate commercial nature."²²

As of the time of this writing some 17 bills to amend the Interstate Commerce Act as it relates to motor transportation are pending in Congress. The author has not been able to read the exact text of these bills but, from all the reports and summaries he has seen, those which bear upon the subject matter of this article follow the recommendations made in the progress report of the Senate committee. This is to be expected but nevertheless is unfortunate in light of the extensive hearings and the emphasis in the report on competition and on the need for preserving the "inherent advantages" of each form of transportation. Although it now seems improbable that any of the bills involving controversial matters will be passed at this session, nothing resembling a unified or coordinated policy could emerge in any case. The legislation, if passed, would be more restrictive of motor carriers than we now have,²³ thus moving in the direction of less freedom of competition than exists at present.

¹⁷ "By 1920, although competing carriers had not yet substantially invaded the railroads' province, the pattern was becoming evident. The Congress realizing that unbridled competition in a field so vital to the national economy might well be destructive of the industry, began to shift the emphasis of regulatory legislation to a new concept, looking to the ultimate protection of the using general public and to the continued welfare of the industry itself. It is this theory of regulating competition in the interest of and for the protection and promotion on the competing carrier that has increasingly characterized legislation in the transportation field in the last 30 years." *Ibid.*, p. 5.

¹⁸ *Ibid.*, p. 5.

¹⁹ "Industries sheltered against the onus of competition soon become ripe subjects for nationalization." *Ibid.*, p. 8.

²⁰ *Ibid.*, p. 22.

²¹ *Ibid.*, p. 22.

²² *Ibid.*, p. 60.

²³ The exception is S2360 which proposes to amend the Interstate Commerce Act by raising the minimum amount of securities that can be issued by motor carriers without the consent of the Commission.

Congress has yet to learn that freer competition does not emerge from an increase of restrictive regulations and that "regulated competition" is a contradiction of terms.

The unsatisfactory nature of public policy in the field of transportation at the present time seems to be recognized on every hand. Much of the lack of agreement on a solution of the issues and many of the contradictions in the proposals arise from a failure to grasp the significant differences in the economic characteristics of the various agencies, with the consequent necessity of adapting regulation to these differences rather than vice versa. The intention to develop a national transportation policy designed to recognize and preserve the inherent advantages of each mode of transportation and to preserve the competitive advantages of each has been reiterated over and over again in legislative debates and in preambles to legislation. The import of the declaration of policy never seems to have been grasped with clarity, however, nor administered with an understanding of the implications. If competition is to have any significance, then suppliers must be allowed to compete. If the inherent advantages of any mode of transport are to be afforded the public, they must be obtained through the competitive process or at least within the concept of the competitive framework. It is only through the medium of competitive concepts that we are able to arrive at an efficient allocation of economic resources.

This idea, however, necessitates a distinction between injury to competition and injury to competitors. All competition is injurious to competitors in the sense that it drives out the inefficient and limits the rewards that successful competitors can receive. This is the essence of competition—the incentive to

strive for profits, and the compulsion to go somewhere else if they are not forthcoming. Costs to the consuming public are thus kept to the minimum necessary to attract the services for which it is willing to pay.

This procedure, however, is hard on competitors. They win only if they can stay in the race. It is not surprising that many seek protection against the rigors of competition. Human beings seem to enjoy having their cake and eating it too. Enterprises want to enter profitable fields but they are too infrequently hesitant to seek protection once they have gained admittance. ". . . There are vast commodity areas where keen competition exists between the railroads and their competition (sic). Significantly, the railroads find little fault with the burden of regulation in those areas where they retain the character of monopoly."²⁴ Competitors must either face the hard fact that competition always poses, and always must pose, the threat of a superior rival, or give up the idea of competition altogether. Public policy must give full recognition to the same thing.

That there need to be rules of competition goes without saying but the purpose of such rules is to preserve competition not competitors. Fair competition has meaning only as it enables enterprises to succeed by the sale of their products to consumers who have alternative choices. This does not recognize survival by preying upon or devouring rivals but it does place survival upon the ability to attract customers by superior service or lower prices, or both, in the open market with rivals.

III. Regulation of Motor Transport on the Assumption That No Other Agency Exists

In order to throw into clear relief the problems of public policy connected with

²⁴ *Domestic Land and Water Transportation*, op. cit., p. 11.

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motor transport it is advantageous to examine them as if no other media existed. In this section, therefore, the regulation of motor transport will be discussed on the assumption that the motor vehicle is the only significant means of inland transportation and that there is no problem of allocating traffic among the various agencies of transport or of protecting one type from the competition of another. This approach has the advantage of making it possible to examine motor transport in its economic setting of a competitive industry without the encumbrance of present paraphernalia and the jargon of current transport economics which starts from the assumption of natural monopoly and the framework of regulation that has grown up around it. This has set up impedimenta which have confused issues and prevented analysis founded upon basic economic distinctions among the various agencies.²⁵ The problem of the interrelationships of the activities of rail and motor carriers will be dealt with in the next section.

Under conditions of competition, or to put it another way, to the extent that an industry is competitive, a producer is unable to influence price to his own advantage. He faces a market situation in response to which he adjusts his output to changing price and profit opportunities. Firms will expand or contract in size or volume of business in response to changing conditions and according to the ability of the different enterprises to adapt themselves to the new situations. Pricing for the services offered will correspond to the costs of rendering those services. Those firms which cannot meet their costs under the prevailing prices will have to retire from the field. Those who are able to make relatively large profits may expand to take advantage of

the opportunities that are presented or may be faced with new competitors. In any case, the adjustment of supply to demand will relate costs and prices so that the returns to the economic resources applied to the industry in question will equate the costs necessary to attract those resources to the prices which can be obtained from utilizing them. The profits received will be strictly competitive ones; no more will be gained than is necessary to attract the resources from alternative uses, and no more resources will be applied to a particular use than can secure a reward as satisfactory as that which can be obtained in some other activity.

For an industry to be competitive it is necessary that resources be both legally and economically mobile. To be legally mobile, it must be possible for them, so far as the law is concerned, to be free to move from one use to another and from one market to another. There must be freedom to move the physical facilities according to the wishes of the producers, or to convert them or divert them to other uses. Similarly, the decision for investment or disinvestment must be left to the enterprisers. In other words, what is called freedom of entry, which also carries with it freedom of exit, is one of the fundamental requirements of a truly competitive structure. If this is denied by the law, special privilege is accorded to an entrant into an industry or to an existing producer, which protects him to the extent that freedom of entry is limited against the pressures of competition. He is no longer faced with the threat of an alternative supplier of similar services who may wish to risk his resources in the belief that his venture may be successful. Instead, the would-be competitor is faced with the necessity of demonstrating, over the opposition of the existing occupants or occupant, that

²⁵ See Ralph Dewey, "Transportation Act of 1940," *American Economic Review*, March 1941, pp. 15-26.

present or prospective markets warrant admitting him. This is a difficult task because of the typically speculative nature of the evidence which can be gathered and because the experimental device of testing out markets by newcomers is precluded by the limitations of the law. Moreover, because such limitations, by their very nature, are designed to give protection to the existing producers, the burden of proof rests on the shoulders of the applicant for admission.

Such legal limitations on mobility of resources are not compatible with competitive enterprise or competitive pricing, nor with the basis for policy which, in connection with transportation, says that, "if each form of transportation is permitted to compete for traffic on a basis of equality, and to perform the service for which it is inherently best qualified, the financial health of particular carriers would not become a matter of governmental concern."²⁶ The recently developed idea of regulated competition is competition without freedom of entry which is competition in an incubator. "Industries sheltered against the onus of competition soon become ripe subjects for nationalization."²⁷

Economic mobility of resources requires that they be readily transferable to uses other than those in which they are presently engaged. This may be accomplished by the physical adaptation of facilities to new markets either by technological changes resulting in the production of new or different commodities and services, or by a geographic shift of plant or facilities to tap other markets. Ready transferability may also be achieved by disinvestment and a shift of the capital funds to other activities. If capital is invested in facilities that have a relatively short life, or in plants that can be shifted

easily from one use to another, or to other market areas, the utilization of resources can respond readily to the demand for them.

Industries characterized by a high proportion of variable costs are the ones which possess the greatest degree of economic mobility. The fact that the costs show a high degree of variability with output means that the resources being utilized in production are variable with the output and are not committed to a particular use or market until they are worn out. It is the extreme degree of specialization of functions, high proportion of fixed costs, and geographic fixity of plant and market areas that can be served, that make railroad transportation and public utilities, such as electricity and water, economically so immobile.

In industries that possess a high degree of legal and economic mobility, little difficulty of relative over or under-supply of facilities will occur, because inducements to ready response to changing conditions are always present. Of course, if at any time more services are available than can be disposed of at the prices which will take them off the market, losses will be suffered until contraction takes place. By the same token, however, under-supply will lead to relatively high prices until new facilities are made available. It is the function of competitive forces to maintain the balance. If they are prevented from doing so by private action, the evils of monopoly appear. If they are prevented from doing so by public policy, then the government is deliberately creating a monopoly situation. In such a case, either the monopolist will enjoy the advantages of the privileges thus bestowed, or governmental action designed to provide a substitute for the competition it has eliminated will have to be invoked. If competitive forces are restrained in their

²⁶ *Domestic Land and Water Transportation*, op. cit., p. 7.

²⁷ *Ibid.*, p. 8.

action by such a policy, and the structure and conditions of the industry are primarily competitive, then the government is trying to play at competition with necessary ingredients missing. The results are bound to be unsatisfactory.

If public policy tries to play at competition by limiting freedom of entry and then invoking price-fixing to assure reasonable prices and to prevent monopoly prices, it faces the necessity of obtaining standards for such a procedure. The difficulties encountered in determining what constitute fair rates and fair profits for public utilities are too well known to need recounting. It should be noted, however, that this is the simplest type of price-fixing problem because a single enterprise can be dealt with in isolation. Rates need to be set only for one firm and the fair return determined for it alone. If a number of firms, however, are competing in the same market the fixing of the prices immediately raises the question of whose fair profits are being considered. If prices are fixed so as to give a fair profit only to the most efficient firm the others will be eliminated. If the fair profit is fixed as an average, those below average efficiency will be eliminated and this process, logically, will keep on until only one producer remains. If fair profit is determined by the requirements of the least efficient, then the others will be earning more than is fair and entry will have to be restricted so that the least efficient can earn a fair profit. Under such circumstances the incentive for efficient production is missing and public policy becomes that of keeping an umbrella over existing producers and excluding others from its shelter. This, of course, is the reason for the resistance of occupants to new entrants and the reluctance of public agencies to accede

to the request for admission tendered by new applicants.²⁸

If an industry is competitive by virtue of its economic structure, the role of public policy is that of maintaining the environmental conditions of competition against predatory attempts to destroy them and against pressure groups seeking special privilege designed to accord to them advantages which they cannot acquire under the rigors of competition. These predatory and pressure group activities generally originate from producer interests and rarely represent the consumer. Consumer protection, where competition obtains, does not require limitation of supply, the fixing of prices or the control of profits. It rests on a different set of assumptions which do not relate to the public control of prices. The consumer is interested in the lowest economic cost and this is what the competitive standard means. The precise details of the regulation which is necessary under competition will vary from industry to industry. It may involve standards of quality, standards of service, financial responsibility, price discrimination and so forth, but it does not require the fixing of relative prices or the control of over-all profits. If the latter are included in the program of control the advantages of competition are lost. Moreover, if they are followed persistently, the competitive structure will be destroyed, if not by creeping paralysis, then in one fell swoop.

As was pointed out in a previous section of this article, the economic structure of motor transport is that of a highly competitive industry. It is characterized by a high proportion of variable costs, a rapid turnover of capital investment, a

²⁸ This problem has been discussed at some length by the California Public Utilities Commission in connection with public utility rate cases. See D. F. Pegrum, *Rate Theories and the California Railroad Commission*, (Berkeley: University of California Press, 1932), pp. 97-101.

ready adaptability of plant and facilities to changing market conditions, a high degree of geographic flexibility of plant and facilities, easily accessible alternative sources of supply of services to consumers, and an absence of economic characteristics that make competition a destructive force leading to the elimination of competitors and the emergence of monopoly. In short, competition can thrive if given the opportunity to do so by public policy which gives full weight to the economic characteristics of the industry. The consumer of motor transport services has alternatives that are not available in other forms of transportation and which are more closely related, in type, to ordinary commodities than to railroad or public utility services. The consumer, in the absence of public restrictions, can make his choice among a number of competitors. He may contract for services, hire equipment, or supply his own. These alternatives afford him protection against exploitation such as he enjoys in the general area of competitive business. So far as the economics of motor transport is concerned, there seems to be no more foundation for the type of regulation that has been applied to railroads and public utilities than there is for its application to business in general.²⁹ On the initial assumption of this section that we are dealing with motor transport in isolation, the arguments for the regulation of motor transport on the analogy of the railroad pattern, stand and fall on the same analysis as would its application to industry in general.

If the foregoing presentation is valid, it follows that consumer protection and public policy do not require rate regulation so as to insure reasonable rates or

stability of rates, nor do they require regulation of security issues in order to safeguard the financial stability of carriers. Restrictions on freedom of entry and rigid prescriptions of routes are likewise unnecessary. The only purpose they serve is to protect existing carriers against competition and to aid them in maintaining possession of the field they have acquired. Such a policy sweeps away the foundations of competitive enterprise.

Reasonable prices in a competitive industry are competitive prices and if the free play of competition is permitted in motor transport the rates will be reasonable. Because of the cost characteristics, there would be slight danger of unreasonable discrimination unless perhaps some carrier might, on occasion, attempt it for predatory purposes. This would be unlikely with freedom of entry because it could not be used with any degree of permanence to restrain new entrants. In any event adequate public protection against that sort of thing can be established without the additional encumbrances of price-fixing.

The necessity of regulation to assure stability of rates is open to serious question. Current regulatory policy has been severely criticized on the grounds that it is too rigid and that rates are not sufficiently flexible to changing conditions. This seems to be an inescapable accompaniment to a regulatory policy committed to the fixing of maximum and minimum rates. The necessity of hearing all sides to the controversy makes lengthy delay unavoidable. Moreover, the policy grew up on the assumption that the carriers were monopolists who were able to ignore the interests of consumers. These structural conditions are absent from motor transport. The consumer, therefore, cannot be the victim of

²⁹ These remarks may not be applicable to urban passenger transport, but that problem has been excluded from this discussion because of the special considerations which it presents.

monopoly conditions unless artificial restrictions are imposed on the carriers.

As for the stability of rates, *per se*, it is difficult to see what special virtue inheres in such a situation or the validity of the argument in favor of it. Transport prices are no more significant than many other prices to business or to consumers. It is difficult to see why stability in transportation rates is more desirable from the point of view of public interest than is stability in the prices of commodities in general, say for example, steel. Curiously enough, the practice of endeavoring to achieve price stability in manufacturing seems to be regarded with antipathy, while being supported as a matter of sound public policy in transportation. The reason for this contradiction probably lies in the development of regulation as a policy designed to control monopoly. If these conditions are absent, the policy loses its validity.

The same remarks apply to security regulation and new investment. These may be vital matters where there is widespread dependence upon a particular firm; where its solvency and revenue requirements are vital matters to consumers who have no alternative. This, again, is not the situation in competitive industry and controls based upon monopoly assumptions are not necessary in motor transport. As in the other items discussed, they run counter to conditions which must obtain if an industry is to be competitive.

In the light of the foregoing discussion, it may be asked whether any regulation, other than that which is applicable to industry in general, should be imposed on motor transportation. At the outset, it should be noted that any regulation applied to this field can control only a portion of the carriers, unless public control goes the whole way and eliminates practically all private vehicles from the

highways. Short of such an extreme, only two possibilities would seem to be available. Either there must be a relaxation of present regulation aimed in the direction of a policy based upon the requirements of consumer protection in a competitive industry, or a continuation of the present admittedly unsatisfactory arrangements whereby a segment of motor transport is controlled by a policy based on the premise of monopoly while the rest operates unhampered by such restrictions.

What the conditions of regulation in the motor transport field would have been like, had rail transport regulation not developed to the stage embodied in the Transportation Act of 1920, is impossible to say. One may hazard the guess, however, that it would have comprehended only such controls as were deemed necessary to protect the consumer who was receiving services from an industry operating in a competitive framework. As a consequence, controls such as those which impose restrictions on freedom of entry of new competitors, fix rates and routes, regulate security issues and supervise consolidations would not have developed. Because of the long historical background of the idea of a common carrier, however, common carrier obligations of readiness to serve all alike without discrimination would rest on the shoulders of those who held themselves out as common carriers. Those obligations can be enforced without resort to the type of regulation now employed.

The idea prevails today that a common carrier is entitled to some degree of protection against competition because of the obligations it assumes and is required to maintain, and that this protection should even limit the amount of competition which other common carriers may offer. Because motor transport

embraces a large number of suppliers who do not fall into the category of common carriers, it is necessary to draw a distinction between the latter and the former so that those who are not common carriers are prevented from offering common carrier service. This, however, is not a sufficient reason for limiting the number of common carriers who wish to compete with each other. If a carrier wishes to offer common carrier service, presumably he thinks the business worth while and wants to compete for it. There seems to be no reason why this should be denied where the structure of the industry is competitive, and certainly consumer protection is not afforded by a policy which imposes limitations on such competition. Nor is it necessary to restrict the competition of contract carriers, either among themselves or with common carriers, if the objective of the policy is public interest or consumer protection. The argument that contract carriers will tap off the cream of the traffic assumes that those who require common carrier service have to be supported by those using the type of service afforded by contract carriers. This argument not only runs counter to the cost characteristics of motor transport but it also raises the question of why the users of contract service should be expected to carry any of the burden created by demands for common carrier transport.

The presentation in this section has been based on the assumption that motor transport is the only type available. On that assumption, the point of view has been developed that public policy for motor transport should be based upon the competitive conditions which characterize the industry if the most effective utilization of economic resources is to be achieved. Since, in any case, this is the presumed objective of regulation, it will be most completely fulfilled if regulatory

policy is constructed, not on the assumption of regulated monopoly nor on the assumption that motor transport needs to be governed by the idea of regulated competition, but on a clear recognition of the fact that the economic structure of motor transport is highly competitive and needs to be treated accordingly. Regulated competition is a misnomer and an endeavor to apply the idea it embraces will either break down of its own weight or lead to monopoly. Motor transport is, however, not the only agency available to the public. It is necessary, therefore, to examine the effects of interagency competition on public policy.

IV. The Effects of Interagency Competition on Public Policy

The preceding section brought out the fact that motor transport does not need regulation to protect it against destructive competition within itself and that public interest does not warrant any such protection. Nor does motor transport need or desire restriction in its competition with railroads. If, therefore, restrictive regulation is to be imposed upon motor carriers, its justification must rest on the necessity of protecting the railroads against the competition of motor transport. This, in turn, assumes: (1) that the railroads cannot successfully meet the competition of a more efficient means of transport services, but that they are entitled as a matter of right to be protected against it or that public interest demands it; (2) that motor transport, by virtue of its economic structure, possesses some kind of advantage that makes it possible for it to resort to tactics designed to and able to kill off its rivals; or (3) that public policy in regulation or public aid gives advantages to motor transport that makes it impossible for competition to bring about an economical division of traffic

between the agencies. The second of these possibilities has been disposed of in the discussion of the economic structure of automotive transportation. It now remains to deal with the other two.

During the last quarter of a century the railroads have been subject to increasingly intensive competition from motor carriers. The traffic of the nation has grown rapidly as a result of the growth of the economy and an increasing variety of transport services. The railroads have participated in this growth, although their relative importance has declined. This is to be expected with the emergence of new agencies in the transport field. The position of the railroads, however, has been aggravated by two factors: the diversion of a significant amount of heretofore profitable traffic with the probability of further developments in this direction; and the pressure of motor carrier competition on railroad rate structures which has compelled a modification of the latter with a consequent diminution of the discretionary powers of railroad management in rate-making.

Motor carriers are able to offer superior service of many types of traffic and they have distinct cost advantages in a number of categories. This is why a significant amount of traffic, heretofore profitable to the railroads, has been diverted to the motor carriers. Continuous improvement in technology in automotive transport will probably maintain this trend for some time to come. For the same reason, the pressure of motor carrier competition on railroad rate structures has compelled modifications of the latter and has reduced the area of discretion for management in rate-making.

Although these developments may be discomforting to the railroads, public interest and the efficient allocation of economic resources do not warrant re-

strictive practices designed to curb them. They are the objectives and the results of the competitive process. The allocation of traffic by free and fair competition means that the most efficient agency will move it because such an agency can offer its service profitably at lower cost. This is not likely to be accomplished without resort to the test of competition. Resort to the test of competition can be achieved only by a price-making process adapted to changing market situations.

If this is to be done, however, both the railroads and the motor carriers must be allowed to compete. If the railroads by free and fair competition are unable to secure certain types of traffic, public interest is not served by practices designed to hold it for them. If other agencies are more efficient, they should be allowed to take the traffic. This may cause disinvestment but that is one way that adaptation to the market is accomplished and is a necessary accompaniment of adaptation if the market is unable to meet the costs arising from an over-supply of facilities. Similarly, motor transport should not be protected against free and fair competition from the railroads.

In order that competition between railroads and motor carriers may be free and fair each of these agencies must be allowed to compete for the traffic, which may be moved by either of them, by charging prices for the services which will result in the carrier being better off than it would be if it did not get the traffic. That is, so long as the carrier can move the traffic at rates which more than cover the costs directly attributable to that traffic, thereby bettering the carrier's net revenue position in comparison with what it would be if the traffic were not obtained, the carrier should be permitted to seek the business. To prevent it from doing so results in unused capacity, a misuse of

economic resources, and an allocation of traffic contrary to relative efficiency as evidenced by cost considerations. What this means is that the pricing structure for transport services should be developed in accordance with market considerations. The minimum prices which should be permitted are those below which the carrier would be worse off if it took the traffic than it would be if it did not.

Rate-making by this criterion would have to permit a much wider range of differential pricing by railroads than by motor carriers because of the differences in the cost considerations of the two agencies. Motor carriers have a much higher proportion of variable costs than rail carriers with the result that the minimum profitable rate for motor carriers differs from average cost by a much smaller proportion than it does in the case of rail carriers. Public policy, in terms of the most economic utilization of resources and the allocation of traffic according to relative efficiencies, is interested in preventing railroads from charging rates which do not add to total net revenue for the purpose of driving competitors out of business. It is not served by prohibiting rates which benefit the carrier but which are not allowed because of the desire to protect other carriers. When the railroads are not receiving adequate net revenues it is difficult to see why they should be prevented from obtaining more net income by utilizing a system of pricing which would improve their financial position. If they are receiving adequate or more than adequate revenues, the adjustment should be made on those elements of the traffic which are making the greatest contribution to the net revenue, rather than on the traffic which would be lost to other agencies if the rates were raised.

In recent years there has been a marked tendency to place heavy reliance

on cost calculations in railroad rate-making with emphasis on rates based on fully distributed costs. The Sawyer report even goes so far as to suggest that there are only occasional situations where rates which fail to cover all costs are justifiable.³⁰ The cost studies of the Cost Section of the Interstate Commerce Commission³¹ lend support to this position and the rate-making decisions of the Commission have evidently been strongly influenced by this point of view. The result is that rate discrimination has come to be regarded with increasing disfavor.

In ascertaining what the minimum cost should be, below which rates for particular services should not be allowed to go, a market-oriented rate policy is necessary. Carriers should be allowed to compete on the basis of rates that will make them better off with the traffic obtained than they would be without it. For this purpose, aggregate and average cost analyses are a clumsy device. Analysis on the basis of aggregate costs ignores the variety of cost conditions arising from the multiplicity of services offered, while the average cost approach necessitates arbitrary allocation of joint and common costs, thereby giving an impression of scientific accuracy that is unwarranted by the facts. Emphasis on the high degree of variability of railroad costs in the long-run glosses over the realities of short-run adjustments which are particularly important in competitive markets. If the long-run is long enough, all costs are variable. The long-run may involve periods of wide fluctuations in traffic conditions, and

³⁰ *Unified and Coordinated Federal Program for Transportation*, Report to the President from the Secretary of Commerce (The Sawyer Report), Washington, D. C., 1949, p. 30.

³¹ *Explanation of Rail Cost Finding Procedures and Principles Relating to the Use of Costs*, I.C.C., Bureau of Accounts and Cost Finding, Statement No. 2-48 (Washington, D. C., 1948). See also Ford K. Edwards, *op. cit.*, 441-461; *Class Rate Investigation*, 1939, 262 I.C.C. 447 (1945).

analysis based on it too readily obscures adaptations which may be necessary for shorter periods. Long-run analysis of cost variations tends to invoke a policy of too much rigidity in rate-making. The validity of the idea that rates need to have long-run stability has already been questioned.

The effect of the average cost approach to rate-making has been to induce a rigidity in the pattern of railroad rate structures that not only reduces competitive ability but also runs contrary to the idea of allocating traffic according to relative efficiencies. As a procedure of pricing, it is a contradiction of market-oriented prices which a competitive situation demands. The ascertainment of minimum costs below which particular railroad rates should not be allowed to go is not a matter of easy determination but the benefit of doubt, when it exists, should be accorded the carrier. Management cannot be expected to discharge its functions in a responsible way if it is not the repository of the primary decision-making power. This is truer today than heretofore because of the highly competitive situation that has developed among the various transport agencies.

Adoption of a market-oriented policy of rate-making must assume a public policy designed to impose, as much as possible, the full burden of costs upon the various types of carriers responsible for them. This is achieved in the case of railroads through the medium of private ownership of all the facilities. The problem is more difficult in the case of motor carriers because the public supplies the heavy investment embodied in highways. To equalize competitive conditions, motor carriers should be required to carry equivalent investment costs. This has many implications which cannot be developed here. It may be pointed out, however, that the railroads bear a

heavy burden of taxes on roadway and structures³² and also have to earn a return on the investment in them. If burdens are to be equalized, motor transport should be required to contribute not only a return on the investment in the highways, but also an equivalent to the property taxes which would have to be paid by the highway carriers if they owned their own roadway.

The division of the total burden among the users of highway facilities is a highly complicated problem. However, the heavy construction required by heavy commercial vehicles warrants the assessment of incremental costs on these, a procedure which would impose a larger relative burden on them than they now have.³³ This would be only a fair *quid pro quo* for commercial users in return for the benefit of having the state carry the responsibility of supplying that part of the facilities which embody the principal fixed cost elements of highway transport.

Protection of an industry against the impact of competition from other industries—that is, suppliers of alternative services—is not necessary for the benefit of the economy. The interests of an economy are served best when resources are allocated according to market demands. It is frequently urged, however, that these are inadequate to insure sufficient transportation facilities for purposes of national defense. If this is a valid point of view, the objective can scarcely be achieved by protecting both motor and rail transport for that involves restricting both agencies before they reach their economical limits. Such a policy prevents transportation facilities from supplying even peacetime needs adequately. Therefore, they are even less adequate for defense purposes. It should be noted

³² *The High Cost of Conflicting Public Transportation Policies*, Association of American Railroads (Washington, D. C., 1951), p. 16.

³³ *Domestic Land and Water Transportation*, *op. cit.*, p. 41.

in this connection, that the great war strength of this country is based on its tremendous peacetime productive capacity and potential. If, however, expansion of transportation facilities, in addition to those which are being evoked by market processes, are deemed essential to national defense then there are other more effective and more economical means of achieving the objective than the policy of restriction. The latter is the worst of the possible choices.

V. Coordination or Unification of Regulatory Policy

As a conclusion to this lengthy presentation, brief mention needs to be made of the implications of the previous analysis on the problems of common ownership of different transport agencies and of administration of public policy. These issues cannot be dealt with at any length, nor is it necessary to do so for the purpose at hand, but a few broad principles of approach to a national transportation policy can be deduced from the point of view developed in this article.

If the basic assumption of inter-agency relationships in transportation is that of competition, then ownership of carrier facilities should be kept in separate hands. At the present stage of the development of transportation the extension of ownership of one type of carrier over another would mean integration around the different railroads. It would result in the linking, by ownership, of a type of transport that is monopolistic in its structure with those that are competitive. If the competitive structure of motor transport were retained, railroad participation in the ownership of motor carriers would simply mean the participation in the motor carrier field of another competitor whose prime interest would be that of keeping the railroad in business. It would be difficult to keep the two

businesses separate and therefore to prevent the railroads from using the advantages of their size and monopoly powers in competing with other motor carriers.

There is also the question of the areas which would be served by railroad-owned motor carriers. Railroads operate in rather precisely delineated geographical areas and are confined to the territories contacted by their roadbeds. Motor carriers criss-cross railroad territories and operate in the areas of different railroads. Extension into other territories is merely a matter of moving vehicles over other highways, assuming of course, that this is permitted. If railroads were allowed to own motor carriers would such ownership be confined to their own territories, or would they be authorized to penetrate outside? It would appear that interagency ownership points in the direction of regional transport monopolies. Such an arrangement runs counter to competitive developments and prevents the growth of policies designed to allocate traffic on the basis of relative efficiency. Interagency ownership offers no solution to present problems but, on the contrary complicates them. The present policy of separation of ownership should be continued.³⁴

Regulation of transportation by a single commission is frequently recommended on the basis of efficiency and the unification of regulatory policy.³⁵ This approach is based on the idea that the various agencies need to be regulated in a similar fashion. It arises from the misconception that the regulation of trans-

³⁴ For an application of this idea to air transport see D. F. Pegrum, *Integration of Air Transport With Other Transport Agencies*, House Committee on Interstate Commerce, National Transportation Inquiry, House of Representatives Doc. 2735, Washington, D. C., 1946, pp. 125-129. See also, G. Lloyd Wilson, "An Appraisal of Nationalized Transport in Great Britain," *American Economic Review*, May 1950, pp. 234-247.

³⁵ *Study of Domestic Land and Water Transportation*, Hearings, *op. cit.*, pp. 473-496.

portation involves the application of policy to a group of agencies that have common economic characteristics. If, however, public policy is to be predicated on competition among the agencies, as advocated in this presentation, then unified regulation should be avoided. Regulation should proceed from the assumption that each carrier should be enabled to compete freely and fairly. The problems are so different for rail and motor carriers that a single regulatory commission not only cannot perform this function satisfactorily but, in addition, the burden of work and detail is too great. Moreover, it is difficult to see what advantages would be gained by such unification if each agency is to be regulated in accordance with its economic characteristics.

Regulation by a single commission seems bound to move towards a monopoly approach to transportation, especially when the railroads occupy such a dominant position in the transport structure. The outlook of the commission is bound to be colored by emphasis on the principal agency. The Interstate Commerce Commission can scarcely avoid being "railroad-minded" because

of: (1) the pre-eminence of the railroads; (2) the development of regulatory theory around the railroads; and (3) the theory of regulation growing out of the unique economic characteristics of railroads.

The precise administrative structure most suited to the foregoing point of view does not need to be detailed here. It is necessary, however, to recognize the two problems of regulation and national transport policy. Separate commissions directly responsible to Congress would appear to be the best approach to the matter of regulation. National transport policy involving such questions as public provision of transport facilities, equalization of tax and other burdens, subsidies, and so forth, need to be coordinated in a single agency of the government. Whether these should be placed in the hands of a non-political commission responsible to Congress or in an executive branch of the government is a question deserving careful study. However, the position which transportation occupies in the economy suggests that the cabinet position of Secretary of Transportation should be created. Most governments in other countries have long since recognized and acknowledged that need.

Reports and Comments

The Agricultural Significance of German Boundary Problems: A Reply†

IN its issue of May 1950 (Volume XXVI, No. 2), *Land Economics* published an article by Philip M. Raup of the University of Wisconsin on "The Agricultural Significance of German Boundary Problems," which referred in particular to the problem of how many people could be fed from the production of the German territories east of the Oder-Neisse line. The author states that he was prompted in his investigation of this question by the German argument that a permanent solution of the German food problem was possible only if the Oder-Neisse territory were to be returned to Germany.

Therefore, in his introduction, Mr. Raup outlined the developments leading to the establishment of the Oder-Neisse line, but referred only to several statements made by the British Prime Minister Churchill, in 1944, in the so-called Cadogan letter, and the letter from President Roosevelt to the Polish Prime Minister Mikolajczyk. He did not mention the Soviet machinations, aimed at moving the western frontier of Poland further to the west. More especially, he failed to make clear that at Potsdam, President Truman was faced with a fait accompli, for the mass expulsions of the German population had already begun. The Soviet authorities also claimed that the majority of the German population had already left the country, although this was not true, as the subsequent figures have proved.

The Soviets argued that the Red Army needed a system of local government in these territories and demanded that they be placed under Polish administration. The United States Secretary of State Marshall, who took part in the Moscow Foreign Ministers' Conference, pointed out at the

time—as was confirmed by the Department of State¹ later on—that it was this situation which persuaded the Western Powers to give their consent to the relevant paragraphs of the Potsdam Agreement. In view of this Russo-Polish denouement, the Western Powers could do no more than give expression to their misgivings in the formulation of the penultimate paragraph of Article IX of the Potsdam Agreement, which reads:

"The three heads of government reaffirm their opinion that the final delimitation of the western frontier of Poland should await the peace settlement."

The developments which followed the Potsdam Agreement are of special significance as they showed clearly that from that time the American and British statesmen regarded the problem of the Oder-Neisse territories chiefly from the viewpoint of food supplies difficulties arising from the loss of the Eastern German granary. It is, therefore, regrettable that these important points were not mentioned by Mr. Raup, although they have immediate bearing upon the subject.

These political and economic aspects of the food and agriculture problem were expressed with particular emphasis at the Moscow Conference of the four Foreign Ministers, March 10 to April 24, 1947, when U.S. Secretary of State Marshall declared, referring to the question of what "compensation" should be granted to Poland in exchange for her territories, beyond the Curzon Line, ceded to the Soviet Union: "With respect to the decision, however, as to what compensation Poland should be entitled to,

¹ On July 17, 1950, the U. S. State Department informed the National Council for Prevention of War in Washington in reply to the question concerning the American attitude towards the mass expulsions: "The United States accepts no responsibility for the expulsions. Mention of the expulsions in Article XIII of the Potsdam Agreement was an attempt to ameliorate the conditions under which expulsions already begun would be completed."

† *Editor's Note.* The authors of this article, writing in the German originally, had the cooperation of friends in presenting this English translation to *Land Economics*. The article is reproduced verbatim as received.

we have to take into consideration which territories are needed by Poland and which territories she can actually populate."² Pointing to Germany's food problem, Mr. Marshall added: "If Germany must in the future import two-fifths or more of her food supply from abroad, the German economy will have to be industrialized to an even greater extent than before, or Germany will become a congested slum in the center of Europe." This, however, would permanently imperil Polish-German relations, a fact which would have to be considered in the delineation of the Polish-German border. British Foreign Secretary Bevin, supporting Mr. Marshall's statements, added at the Moscow Conference that Germany should be granted a larger agricultural area, and proposed to establish a commission for the investigation of the problem of Germany's frontiers. When the Soviet Foreign Minister, Molotov, in reply, pointed out that the Potsdam Agreement, with regard to frontier questions, had established a final state of affairs, i.e., arguing that the phrase in the Potsdam Agreement that "the final delimitation . . . should await the peace settlement" was to be interpreted that the peace conference should deal only with minor frontier adjustments U.S. Secretary of State Marshall declared: "Mr. Molotov's statement that the Polish-German frontier has been finally established with the exception of minor points, is in direct contradiction to the English wording of that phrase, in the opinion of the American delegation, as well as according to the instructions which I received from the President of the United States when I was delegated to attend this conference. Moreover, the American minutes of the Potsdam negotiations demonstrate even more clearly our divergent conceptions of the Potsdam Conference."³

Mr. Marshall then revealed that the Western Powers at that time had addressed a written request to Marshal Stalin, demanding "that in certain areas no Polish administration should be instituted as long as the western Polish borders has not been finally established."⁴

At the Foreign Ministers' Conference in London, Mr. Marshall declared: "The United States believes that an effort should be made to establish a frontier which, while

it would compensate Poland, would not become a formidable economic barrier preventing Germany access to food and raw materials from this eastern area upon which it has greatly depended." This statement, too, shows an appreciation of the food requirements of Germany.

General political importance should also be attributed to the fact that *The New York Times* pointed out on several occasions—for the first time in its issue of April 26, 1948, and repeatedly since—that the Oder-Neisse territories, according to international law, still belonged to the German state, on the basis of the Agreement of June 5, 1945, to which the Soviet Union was also a signatory power, and which states that "the German frontiers should be those of December 31, 1937."

All this shows that the American and British attitude on the question of the Polish-German frontiers is based on the precise regulations of the Potsdam Agreement and the definitions of the Agreement of June 5, 1945, regarding the delimitation of the four occupation zones and, moreover, having regard to international law, takes into special consideration the food situation which faces Germany after the loss of her eastern agricultural territories.

In the second part of his paper, Mr. Raup refers particularly to the agriculture of the surrendered territories. After a critical review, surveying the basic agricultural conditions of the area, the questions of its food production and supply capacity for the remaining German area were discussed in detail. In conclusion, an economic evaluation and an estimate concerning the consequences, to the present four zones, of a final loss of the territory are given. It is felt that this part of the article also calls for a detailed comment on our part, which is submitted in the following, as an expression of personal opinion.

To start with, it must be admitted that the difficulties of a meticulous investigation of the surplus food production of Eastern Germany after the arbitrary disruption of various administrative districts by means of the Oder-Neisse Line, have been stated correctly; and as a matter of fact, several German post-war publications have been found to be unreliable to some extent owing to deficiencies in statistics and to exaggerations. These obvious defects were, however, corrected as

² Re-translation from German quotation.

³ Re-translation from German quotation.

⁴ Re-translation from German quotation.

early as 1947 or 1948, when, under the careful supervision of the President of the German Agrarian Association, extensive research in official sources led to the publication of a book entitled *Eastern German Agriculture and its Surplus Production*,⁵ in the fall of 1949. As long ago as the spring of 1949, Mr. Raup had an opportunity to study the manuscript, according to his own wish. His criticism, however, of the results of German research, presented to the American public one year later, does not do justice to the German revisions and explanations, of which he had knowledge.

In actual fact, the article by Mr. Raup, and that of the German Agrarian Association arrived at practically the same conclusions with regard to Eastern Germany's food production, which, according to Mr. Raup, should suffice to feed approximately 14.1 million people, while the German Agrarian Association quotes the figure of 15 million, taking into account certain reasonable considerations with regard to a somewhat restricted industrial utilization of the potato crop. This latter figure has also been officially acknowledged in the Federal Republic, as shown in the government-sponsored exhibition, "German Home Country in the East." This agreement of the deductions makes unnecessary a critical review of the divergent methods of reasoning. The detailed German statistical data which exist also proves the inaccuracy of the semi-official Polish reports on Eastern Germany's prewar food production.⁶

A number of classifications and theories set forth by Mr. Raup, in an evaluation of the agriculture in the eastern German areas do, however, require definite revision.

As in other parts of Germany, the agricultural structure of Eastern Germany was primarily determined by the existence of family-worked farms. The average size of the farms amounted to not more than 13.3 hectares, those in intensive culture areas in the U.S. being three times that size, and the general average over the whole United States, a total of six million farms, being as much as five times that size. Taking into consideration the fact that the area of large estates in East

Germany (over 100 hectares) under cultivation was only 30% of the total area under cultivation, 70% being small and middle-size farms, then it will be seen that the existence of large agricultural concerns was evidently not the determining factor in the structure of agrarian organization.

Moreover, the assumption that East Germany's proportion of land planted with grain, potatoes and sugar-beet is "approximately the same percentage as other cultivated areas" is basically incorrect and gives rise to a misinterpretation of the East German livestock situation. In order to provide a clear picture of the actual situation, the following figures may demonstrate the significance of Eastern Germany (in percentage of the "Reich" total):

1. SHARE OF CHIEF CROP AREAS: 1935 TO 1939

| Area Planted with: | Percent |
|--------------------|---------|
| Potatoes | 30.3 |
| Grain | 27.8 |
| Sugar beet | 25.0 |
| Feed roots, etc. | 20.8 |
| Permanent pasture | 20.8 |
| Hay | 17.3 |

2. SHARE OF CROPS: AVERAGE 1935 TO 1939

| | Percent |
|------------------|---------|
| Potatoes | 29.6 |
| Grain | 25.4 |
| (Rye only) | 32.0 |
| Straw | 25.5 |
| Sugar beet | 25.0 |
| Feed roots, etc. | 22.3 |
| Hay | 18.2 |
| Pasture crop | 17.7 |

3. SHARE IN LIVESTOCK: 1938-1939

| | Percent |
|---------|---------|
| Horses | 30.4 |
| Cattle | 20.7 |
| Hogs | 22.4 |
| Sheep | 20.1 |
| Goats | 17.5 |
| Total | 22.4 |
| Poultry | 20.2 |

4. SHARE OF ANIMAL PRODUCTS AVERAGE 1935-1939

| (Milk: Average 1938-1939) | Percent |
|-----------------------------|---------|
| Whole milk (cows and goats) | 21.2 |
| Meat | 21.4 |
| Commercial fats | 21.0 |
| Eggs (corrected figure) | 18.6 |
| 5. AREA UNDER CULTIVATION | 25.0% |
| 6. FARMING POPULATION | 22.3% |

⁵ G. Heyn, *Ostdeutschlands Landwirtschaft und ihre Ueberschuesse* (Bonn, Germany: Deutscher Agrar-Verlag G.m.b.H.), 1949.

⁶ Special report, *Zycie Gospodarcze*, published on the occasion of the Exhibition of the Western Polish Territories in Breslau in the fall of 1948, by T. Golebiewski, Warsaw.

From the above statistical data the following conclusions may be drawn:—

(a) *Compared to the share of land under cultivation (25%)*: Only the percentages of grain and potato cultivation are above the 25% level. The proportion of sugar beet cultivation equals the area proportion. The other crop categories are considerably below that level. The livestock and animal products figures (22.4 and 21%) are 10 to 15% lower than the area proportion of 25%.

(b) *Compared to the share of the farming population (22.3%)*: This proportion, similarly a decisive factor in the volume of production, is fairly equal to the proportions of livestock and animal products. It proves sufficiently that the eastern territories, in spite of less favourable conditions for cattle-raising, had fully reached the normal average that could be reasonably expected.

Surely no one would consider disqualifying such American states as are naturally less favourable for cattle-raising, simply because they cannot contribute to the same extent in providing animal products as those states naturally better equipped. Nor would any one consider supporting the more favourably placed areas by supplying feeds able to be transported. If it is acknowledged that Eastern Germany, in accordance with its production of cultivated area, reached approximately 25% of the milk production of the whole Reich area, it must be recognized that a correct computation would arrive at approximately the same percentage for meat and fat production and that, therefore, an East German share of only 10% of the total German meat production is impossible.

Mr. Raup's theory that "the system of agriculture did not emphasize livestock farming, with its intensive use of land and labor demands" is thus, to some extent, already refuted. However, another misinterpretation must also be indicated. In the United States, intensive livestock and dairy farming coincides with intensive cultivation of the most fertile soils, achieving the highest yield per acre. This is definitely not the case in Germany, where agriculture is in general more intensified, as is evident from the livestock figures of areas planted with sugar beet. Actually, the extent of cattle-raising in Germany is determined decisively by the size of the extensively cultivated pasture areas. Another divergence from American conditions lies in the fact that in

Germany the intensity of soil cultivation and, consequently, the average yield per hectare, is definitely higher in large than in small farms, and the same is true of the per head yield in cattle raising, although the number of cattle in proportion to the acreage is lower in small than in larger farms.

Here are some characteristic data about East Prussia: agriculture was chiefly determined by cattle breeding, and it was well-known for the high quality and pure breeding of its livestock. The superiority of the Trakehnen horses and the black-and-white lowland cattle was uncontested far beyond the boundaries of East Prussia, even outside of Germany. Average milk production per cow was 3,150 kilos, which compares favourably with the northwest German cattle areas, and even with Holland, Denmark and Belgium, while far surpassing eastern countries (Czechoslovakia, Lithuania and Poland). These facts, which can be considered as definite proof that livestock farming was emphasized in East Prussia are, however, completely ignored by Mr. Raup, which deprives his American readers of the possibility of judging accurately what heavy losses, from the point of view of cattle-raising, are inflicted upon Germany in time to come if these areas, noted for their fine cattle, were to be ceded permanently to Poland and Soviet Russia.

Further clarification is also needed with regard to livestock farming. On the average, the lost eastern territories were not far behind the central German area (approximately the present Soviet zone), with cattle and horses 7% above average, milk 5% above average, but meat 7% below average and commercial fats 4% below average. In both areas, carbohydrate crops (potatoes and sugar beet) with their ample supply of valuable feed by-products were used to supplement the feedstuff basis for cattle and sheep. A biased criticism of the processing of the surplus potato crop as alcohol does not take into account the great advantages of this particular form of utilization of potato crops grown on the comparatively loose soils of the eastern territories.

The argument that the German sugar is inferior to that produced in Cuba has likewise no bearing upon the problem. If even countries like England, France, Belgium, and Poland, now amply provided with about 50% of former German cultivated soil, cannot afford the luxury of discontinuing their own

sugar beet cultivation, how much less so can a dismembered Germany do so, which is laboring under most severe economic strain and has hardly 30 hectares of cultivated area per 100 inhabitants, thus having at her disposal only about one-tenth of the corresponding territory in the United States, which is about 300 hectares. Another fact not sufficiently considered but very essential is that Germany—particularly since the world sugar crisis of 1930-1931—has realized the eminent importance of the sugar beet as a basis of fodder supply and will therefore hardly consider discontinuing its cultivation.

According to figures showing the quantities of concentrated fodder consumed in the lost eastern territories, the following percentages of the crops produced had to be set aside for local livestock feeding: bread grain, approx. 15%; fodder grain 86%; potatoes, 40% (including potato by-products such as distillery waste, etc., 43%). In addition to this, about half a million tons of concentrated feed were imported, that is about 10% of the entire concentrates requirements. These facts are sufficient to disprove the contention that "pre-war Eastern Germany did not convert its grains, potatoes, and fodder crops to livestock products in large quantities and did leave the task of doing so to the West of Germany." Had the latter really been the case, then the considerable proportion of East German supply to the West German refining industry would, in all fairness, have to be taken into account. This, however, is not shown in Mr. Raup's study.

The theory, advanced with an eye upon East Germany's horticulture and vineyards, that East Germany's food production was characterized by a relatively low monetary value, also appears, in the light of our explanations to be a rather far-fetched attempt to discredit the achievements of Eastern Germany. After all, does not the United States also concentrate its horticulture and viticulture in those areas where soil, climate and density of population provide the most favourable conditions? In Germany, the various branches of agriculture were distributed over the entire Reich area, according to a very reasonable pattern which also took the natural conditions of production into due consideration. Within the framework of Germany's entire supply system, the eastern areas fulfilled their part of the responsibility; a fact which, however, did not rule out possible further improvements. The

monetary value of produced foodstuffs and stimulants certainly was not the decisive factor in this respect.

In Table V of his essay, Mr. Raup furnishes information on the proportionate distribution of the total food production in crop units by zones of occupation, the values and quantities being measured by "International Crop Units." Supplementing this survey by the percentages of cultivated areas and farming population as productive factors the following picture emerges:—

| Area | Production (in crop units) | Farming Population | Cultivated Area |
|--------------------------|----------------------------------|-------------------------|--------------------|
| | | <i>percent of total</i> | |
| Area east of Oder-Neisse | 22.3 | 22.3 | 25.0 |
| Soviet Zone | 23.7 | 19.2 | 23.4 |
| British Zone | 23.8 | 20.9 | 21.9 |
| U. S. and French Zone | 30.2 | 37.6 | 29.7 |
| TOTAL ALL-GERMANY | 100.0 | 100.0 | 100.0 |

According to this information, Eastern Germany, although less favoured by nature, definitely does not play so poor a part as the article tries to prove, even with regard to values, especially when compared to the U.S. and French zones, with their high percentage of intensive cultivation farms, higher priced animal products and particularly valuable special crops (fruits, grapes, tobacco, hops, etc.)

The significant differences between the British and the Soviet Zones are shown in the following table:—

TABLE I—SOVIET ZONE + OR —, IN PERCENTAGE OF BRITISH ZONE

Crops, Av. 1935-1939

| | |
|-------------------------|------|
| Sugar beet | + 93 |
| Potatoes and oil plants | + 63 |
| Grain | + 40 |
| Pulses | + 25 |
| Total hay crop | + 18 |
| Fodder roots, etc. | - 13 |
| Pasture yield | - 79 |
| Total starch value | + 14 |

Livestock Farming & Milk Production: 1938-1939

| | |
|---------|-------|
| Horses | - 5 |
| Cattle | - 24 |
| Hogs | - 18 |
| Sheep | + 106 |
| Goats | + 45 |
| Total | - 16 |
| Poultry | - 21 |
| Milk | - 32 |

Consequently, the Soviet Zone certainly surpassed the British Zone in agricultural production which, after all, represents basic production. On the other hand, its livestock farming (-16%) and milk production (-32%) are definitely below the British Zone figures. (Comparing British Zone production to that of the ceded eastern territories, the following figures for Eastern Germany are arrived at: agricultural production, +6%; livestock farming -11%; milk production -28%. The differences are less than between British and Soviet Zones.)

In the opinion of Mr. Raup, the combination of value and quantity for such productivity comparisons is the only correct method, and he even states, in another connection, that it would have to be considered as a "basic error in the agricultural concept of Germany" if, in the future, comparisons based on quantities only were made, without regards to costs (for instance, one ton of pork equals five tons grain). All this shows that part of the problem is to be found in the different manner of American and German thought, which is not easily adjustable, and which has to be taken into consideration. For the United States, with its immense surplus of food products, the supreme principle is to achieve the highest output per labor unit, in order to reduce the production costs per area or production unit. This object has been achieved to an astonishing extent. On the other hand, there is a painful scarcity of agriculturally utilizable land in Germany and, consequently, the need for achieving maximum crops per area unit while most carefully preserving soil fertility. For this reason, methods of comparison applied to Germany rely more on a comparison of quantities than upon other factors.

The Indispensable East

The good potato crops of 1948 and 1949, Mr. Raup contends, have made Western Germany self-sufficient for these two years, "thereby removing a major protest regarding the indispensable nature of the eastern territories" as a supplier of seed potatoes.

As a matter of fact, Western Germany has always been self-sufficient with regard to potatoes for human consumption; not, however, with regard to potatoes for livestock feeding. At present, considering the population increase of 20%, hog-raising has to exceed the prewar level substantially, in order to insure the meat supply. The

critical meat shortage of 1948-1949 has shown, however, that this was far from being the case.

The prewar per hectare yield of potato crops was surpassed in 1948 and even more so in 1950. On the other hand, the same was true of West German's neighbours. It is not possible to ascertain to what extent favourable weather conditions or increased fertilizing and high-quality seeds contributed to this success. With regard to Western Germany, however, it can be said that, based on present-day more accurate crop evaluation methods, peace-time crops were underestimated by approximately ten per cent. The 1948-1950 crops were therefore not more than 15% above the prewar average. Moreover, it would be more economical to produce seed potatoes in Eastern Germany because, in West Germany, due to climatic conditions unfavourable for breeding, species preservation and selective breeding (vegetable rot) necessitate expenditure at least three to five times higher. Then again, more fertilizer is used for potato-growing than before the war. It is, therefore, not yet proved by these arguments that the superior Eastern German seeds can be dispensed with, nor by the negligible reduction of shipping costs resulting from shorter shipping routes.

A critical review of manifold exploitation methods and questionable forecasts on future productivity induce Mr. Raup to conclude that the importance of the loss of these territories is repeatedly over-estimated and that, in the case of their return, renewed subsidies and capital investments would seriously add to the economic difficulties of Four-Zone Germany.

Prewar customs policy with regard to grain and sugar was definitely not designed to privilege Eastern Germany, but to protect the entire Reich area, particularly the region of the present Soviet Zone, which was by far the most productive part of the country. Moreover, a substantial reduction of grain cultivation was hardly feasible in view of the necessary preservation of soil fertility (straw, manure) guaranteed only by a system of intensified crop rotation.

The "system of rail differentials to favor the East" cannot be interpreted as having been arbitrarily dictated by successive German governments. It was rather part of the demands of agricultural circles to counteract the effectiveness of the "Thuenen concentric

belts"⁷ which also exist in the United States and require special measures. Great Britain, although twenty years ago the classic stronghold of free trade, today also realizes this necessity and has introduced her system of "straight subsidies"⁸ for this reason.

Referring to the supply of additional labor for agricultural production, Mr. Raup's words create the false impression that a number of measures were introduced simultaneously, although in actual fact they came into effect at different times. On the whole, the percentage of additional labor was relatively small. Moreover, he ignores completely the simultaneous progressive shift of agricultural labor to industrial employment and the continually increasing demands of the army during the last few years before the war. From 1933 to 1939 alone, agriculture lost more than 400,000 indigenous land-workers.

During the period between 1935 and 1944, the financial situation of Eastern German agriculture was not unfavourable in view of the rising price level. The railroad system in the east was also substantially intact up to the end of the war, even though heavily burdened by military transports. It is also doubtful whether destruction, pilfering and deaths would have reached the same proportions that they did during the brutal expulsions if the eastern territories had remained part of the former "Reich." It is true that the East would hardly have been able to supply the

West with food surpluses during the first postwar years, but it would certainly have relieved the West of that burden which was caused by the millions of expellees transferred to West Germany. This fact must not be ignored in a review of what has happened. The bottleneck in supplying Western Germany with nitrogen fertilizer, for instance, or bulldozers, has already been overcome, as we see from the export figures of the last eighteen months, and the present-day equipment of West German agriculture, which is considerably above prewar level. A surplus of capital goods might even now be made available from the present industrial capacity of Western Germany for the reconstruction of the eastern territories at an increasing rate.

According to the careful calculations of the German Institute for Economic Research, Germany, before the war, depending to some 17% upon foreign countries, was able to feed approximately 12 million people from imports and approximately 57 million from her own resources. Of the latter, about 15 million were fed from the lost eastern territories. If these territories are finally lost, the four zones of Germany with their present population of 68.8 millions will then have to import food for from 26 to 27 million people, taking the peace-time level of production and consumption as a basis. The Soviet Zone has not by any means fulfilled these conditions so far, so that even if the eastern territories were to be returned and reached their full peace-time productivity, food would have to be imported for approximately twelve million persons and not only for six to eight millions.

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⁷ Thuenen concentric belts. This term refers to a theory of the German economist, Thuenen, according to which prices at point of consumption and transportation costs from point of production determine the territorial distribution of agricultural production.

⁸ E. S. Schlange, "Die Subsidierung von Ernaehrung und Landwirtschaft in Grossbritannien," *Hefte fuer Landwirtschaftliche Marktforschung*, Heft 3 (Berlin and Hamburg, Germany: Paul Parey).

The Agricultural Significance of German Boundary Problems: A Rejoinder

WITH exception of the points noted below, it is difficult to join issue with Dr. Kurth and Dr. Heyn. For the most part, their argument is offered, as they explicitly state, "as an expression of personal opinion," and it is in this context that the reader will have to appraise it.

The central argument of my paper was that the area east of the Oder-Neisse was not

as important a food supply source for Western Germany as a number of German publications were claiming. This Dr. Kurth and Dr. Heyn admit. That it was nevertheless a significant source of surplus food production for Western Germany is also quite true, though subject to overstatement.

The authors' contention that the prewar structure of agriculture in Eastern Germany

"was primarily determined by the existence of family-worked farms" may mislead the reader unfamiliar with the prewar German land-ownership pattern. Many of the large estates and latifundia in Germany east of the Oder-Neisse were operated by resident owner-operators. The typical large landowner or landlord of Eastern Germany was not an absentee owner. In this sense it would be true to say that "family-worked" farms set the agricultural tone for East Germany. If the more common sense of the term "family-worked" is intended, i.e., that the major portion of the farm land was in units no larger than could be operated by the average-sized farm family using occasional seasonal labor, then the statement is clearly wrong. In this connection it is surprising that the authors attempt to draw a comparison between size of farms in Eastern Germany and in the United States. The relevant comparison is between the different areas of Germany. On this point the statistics are available and clear.

PROPORTION OF FARMING AREA IN UNITS OF OVER
100 HECTARES, 1939¹

| Region | Proportion | Proportion |
|----------------------------------|-------------------------------|--|
| | or total area (Percent) | of agr.-used land only (Percent) |
| Area east of Oder-Neisse | 47.8 | 33.0 |
| Present area of Federal Republic | 28.1 | 6.8 |

¹"Census of Farm and Forest Units," May 17, 1939, *Statistik des Deutschen Reiches*, Vol. 560, Berlin, 1943.

With almost one-half of the total area (including one-third of the agriculturally-used land) in units of over 100 hectares, it is difficult to argue that the area east of the Oder-Neisse was predominantly an area of family-sized farms. This is particularly noteworthy when compared to the size distribution in Western Germany, which for the most part is an area characterized by family-sized farms. To appreciate this fully, it must be remembered that, generally speaking, the upper limit of the family-sized farm in Germany lies somewhere between 30 and 60 hectares (75 and 150 acres). It is doubtful that the authors' contention on this issue would find general acceptance among their colleagues.

It may be helpful to point out that the concentration of large estates in prewar Germany was greatest in Mecklenburg and Pomerania, and not in East Prussia. The northern portion of what is today the Soviet-dominated section of Germany had a some-

what greater prewar concentration of large land holdings than did the area now east of the Oder-Neisse line, and was generally regarded as more backward. There was an appropriate differential between the two areas in degree of agricultural advancement, in favor of the area east of the Oder-Neisse. One is reminded in this connection of the apocryphal quotation, usually attributed to Bismarck, that he hoped that the end of the world would find him in Mecklenburg, for everything always happened there one hundred years late!

Agriculturally speaking, East Prussia (and the area east of the Oder-Neisse in general) was not the least advanced sector of the German economy. This is freely admitted, but is beside the point.

It is unfortunate that the authors of the foregoing article do not show the source of their statistics. This makes it difficult to reconcile several points at issue. This defect is of more than usual significance. The Oder-Neisse line cuts through former provinces that were the areal bases for statistical reporting. As a result, prewar agricultural statistics for the area east of the Oder-Neisse must be derived by manipulation. The choice of the factors used in determining what fraction, for example, of the milk produced in Mark Brandenburg came from the portion of that province now east of the Oder-Neisse line can give rise to substantially different results even though ostensibly based on the same original data.

There are also some mystifying interjections of imaginary issues, possibly due to errors in translation and retranslation. This seems the only possible explanation, for example, for the allegation that I had maintained that German sugar is inferior to that produced in Cuba. I certainly agree that this has no bearing on the problem, but am curious as to how it can be read into my earlier article. In a similar vein, the authors charge me with the rather meaningless assertion that "East Germany's proportion of land planted with grain, potatoes and sugar-beet is 'approximately the same percentage as other cultivated areas' . . ." This misunderstanding is probably due to a misreading of the term "other crop land" as used on page 105 of the original article. Nowhere do I make the statement quoted above.

On one issue the authors are correct. The proportion of total German meat pro-

duction produced east of the Oder-Neisse was 21 percent and not 10 percent; a typographical error on page 107 of the text of my original article is at fault. However, the correct figure (21.3%) was used in Table II of the original article. The significant point here is not what was produced (i.e., on the hoof) east of the Oder-Neisse but how much of it actually found its way to Western Germany. The best available figures indicate that only about 8 percent of Western Germany's prewar meat supply came from east of the Oder-Neisse (Table III of my article). The author's argument that the meat contribution must have been much higher because meat and milk production go together is weak.

On one point the inference that I deliberately ignored conflicting data is doubly misleading. They refer to the fact that a manuscript copy of Dr. Heyn's book, *Eastern German Agriculture and its Surplus Production*, was shown to me in the spring of 1949. I was at that time requested to regard it as a draft copy, not yet in final form and still awaiting publication. Accordingly, I took no notes on it, and would have felt obligated

not to refer to the manuscript, if I had been tempted to do so. My article in question was prepared during the fall of 1949, and it was not until much later that I learned that the manuscript shown me in Berlin had actually been published. As the authors point out, Dr. Heyn's study and my article are in substantial agreement as to the prewar number of people fed from the territory east of the Oder-Neisse. The similarity of our conclusions would seem to nullify most of the argument at this point.

One lesson seems clear. The explosive political considerations that are associated with the Oder-Neisse area seem likely to overshadow any economic analysis of the past or potential food productivity of that region. By the standards relevant to this super-charged atmosphere, Dr. Kurth and Dr. Heyn have maintained a moderate approach in their criticism, and their comments have been welcomed.

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Housing Research in Canada†

HOUSING research in Canada is conducted largely by government agencies—academic or private research is practically non-existent. This is, perhaps, not surprising for two reasons: (1) Basic research in the housing field consists of the compilation of data for statistical series, testing of building materials to meet building code requirements, certain elements of town planning, and major problems of mortgage lending—all activities which take tremendous resources to conduct. An independent investigator simply does not have the facilities to do such work.¹ (2) There is not a strong tradition of academic research in Canada in the problems of housing. Since the inception of the *Canadian Journal of Economics and Political Science*, some 420 articles have been published, of which

only two have been related to housing. Of the more than 200 academic economists in Canada only a very few have done considerable work in this field. Consequently, studying housing research is studying the work conducted by the government.

The objective of this paper is to trace the development of knowledge of housing conditions in Canada, to evaluate research studies done in the past and to suggest methods for improving present research activities. It is not intended, by explicitly stressing the work of the government, to implicitly absolve academic and business economists from a place of importance in this activity. Research does not end with the compilation of data—the interpretation and analysis of data for the purpose of obtaining new facts is equally important, and can be done without the expenditure of great resources.

I.

The first attempt to provide information on the nature and condition of housing in Canada was made in 1913 by W. S. Bryce in

† This paper was originally presented at the Indiana University Seminar in Urban Land Economics. Its scope is limited to problems of economic research in housing, arbitrarily excluding town planning and building material research. The opinions in this paper are purely personal and do not represent the views of any agency with which the author has been associated.

¹ There is no organization similar to the National Bureau of Economic Research in Canada.

an article entitled, "Housing the Immigrant Worker."² This study, based on a survey of five major cities, pointed out the inadequacy of the existing housing in urban areas. Any effects which the article might have had on improving conditions, however, were prevented by the outbreak of World War I, and it was not until 1919 that the problem of inadequate housing again received public attention—and then only very little. In a report of a committee appointed in 1918 to investigate industrial unrest, it was emphasized that "another cause of unrest, which we met with at practically every place we visited was the scarcity of houses, and the poor quality of some which did exist."³ As a result of the report the Federal Government made loans to the provincial governments to assist individuals desiring to build homes.⁴

With the return of prosperity in the 1920's, housing soon passed from national consciousness and was not again a public issue until the early 1930's. By 1935, however, it was so important that a special committee of Parliament was appointed with very wide terms of reference to investigate the entire nature of Canada's housing supply. From the first, the Committee was limited in its investigation by lack of information concerning housing.⁵ Through interviewing many health officers, city treasurers and officials the Committee managed however to gather considerable information—enough to make recommendations for a specific housing law, but the difficulty which it had in getting data was instrumental in its recommending provisions for housing research. The government accepted the Committee's proposals and passed the Dominion Housing Act which specifically provided for investigations and reports on housing conditions, housing schemes, housing abroad and cost factors in housing⁶—a basic start toward research in housing.

Soon after this Act was passed the government was defeated and its successor repealed the legislation and replaced it with the Na-

tional Housing Act of 1938 which not only retained but extended the provisions for research contained in the earlier measure.⁷ Unfortunately, the entire housing program was administered by the Department of Finance and research conducted under its sponsorship, until 1939, was noteworthy only through its absence.

In the meantime, two contributions were made from other government sources. H. F. Greenway of the Dominion Bureau of Statistics took material gathered in the 1931 Census, supplemented it with sample surveys in towns of 30,000 and over, and analyzed it. The information contained in the Census was limited to six schedules—size of house by number of rooms, type of construction, material of construction, owned or rented, amount of rent and value of owned homes.⁸ From this data Greenway wrote a 168-page monograph which was available in mimeographed form in 1939 and published in 1942.⁹

The other contribution was a study entitled *Housing*, by A. E. Grauer, prepared for the Royal Commission on Dominion-Provincial Relations. It appeared in 1939 and contained seventy-eight pages, thirty-one of which described housing in other countries, ten were bibliographies and tables and thirty-seven or less than one-half, superficially considered Canadian housing conditions—based on information contained in the Report of the Special Committee of the House of Commons.¹⁰

Another piece of research was published in 1943—a study entitled, *The Labour Value of the Building Dollar*,¹¹ by O. J. Firestone, now economic adviser to the Canadian government's housing agency. In this monograph, Firestone attempts to estimate the effect of public assistance to housing on the Canadian economy during the period 1935-1943. His conclusion is very general—"the recovery of the construction industry was partly due to the improvement of general economic conditions in the country and partly due to the initiative of the Dominion government in stimulating building by encouraging private

² W. S. Bryce, "Housing the Immigrant Worker," *Proceedings of the Canadian Political Science Association*, Number 1, 1913, p. 89.

³ "Report of the Royal Commission on Industrial Relations," *Labour Gazette (Supplement)*, July 1919, p. 13.

⁴ The limited extent of this operation can be recognized by the fact that in a period of fifteen years only slightly over 6000 houses were built.

⁵ *Special Committee of the House of Commons on Housing* (Ottawa: King's Printer, 1935), p. 21 et. seq.

⁶ 25-26 George V, Chapter 58, Section 3.

⁷ 2 George VI, Chapter 49, Part V.

⁸ The first complete housing Census was conducted in 1941. A discussion of the many problems of Census taking in housing are omitted from this paper.

⁹ H. F. Greenway, *Housing in Canada* (Ottawa: King's Printer, 1942).

¹⁰ A. E. Grauer, *Housing* (Ottawa: King's Printer, 1939).

¹¹ O. J. Firestone, *The Labour Value of the Building Dollar* (Ottawa: Department of Finance, 1943).

construction."¹² Until 1945 one could well conclude that under all tests of measurement the research in Canadian housing was of an extremely limited nature.

II.

As early as 1940 the Canadian government evolved plans for the domestic reconstruction for the economy after the war. The many government committees which were appointed to recommend methods for an effortless transition from war to peace were eventually grouped into a single committee on Reconstruction and Supply under the Chairmanship of Cyril James, Principal of McGill University.¹³ The committee was responsible for the preparation of a report on housing and community planning, and under the Chairmanship of C. A. Curtis of Queen's University such a report was prepared—largely by L. C. Marsh. This report, commonly called the Curtis Report, became the basis for Canada's postwar housing program.¹⁴

The Curtis Report was the first major attempt to assess the Canadian housing situation from a national viewpoint. It not only used the existing data, but also collected much new information, as basis for recommendations for changes in housing legislation. The Committee, through the Report, felt that a public housing program of large dimensions would be necessary after the war, not only to provide new housing units, but as a "productive vehicle of both public and private investment"¹⁵ necessary to maintain full employment. All in all 109 special points and observations were made. The Curtis Report provided a study of statistics, estimates and plans for the future development of Canadian housing.

Although the report was widely accepted it contained many inadequacies. The major one, probably, was the fact that it placed emphasis on a study of the past and a diagnosis of the future in terms of events in housing—and housing alone. Little or no attention was paid to the reasons why housing conditions existed as they did in the past, with the result that future needs were examined with the implicit assumption that the

economic environment in which housing operations took place would be the same in the postwar period as it was in the 1930's. Consequently, the report missed the major problems that confronted housing officials in the later part of the 1940's. The main reason for this might be found in the fact that important members of the panel were convinced that the postwar problem would be one of unemployment. It turned out instead to be inflation. In addition, while it contained recommendations for further government participation in the field of housing, the report failed to examine why the existing legislation had been so ineffective in the 1930's.¹⁶

In 1944, soon after the preliminary drafts of the Curtis Report were available, the government introduced Bill 183 into the House of Commons which contained some of the ideas proposed by the study. This Bill later became law as the National Housing Act of 1944.¹⁷ For the purposes of this paper Part V of the Act is the most interesting, for it required that "investigations be made into housing conditions and the adequacy of existing housing accommodation in Canada" and "therefore it is required to study housing progress in other countries, factors affecting the cost of construction of housing, the planning and designing of houses having low costs of construction, principles underlying town planning and studies of land utilization."¹⁸ By Section 26 of the Act contracts could be entered into with universities and organizations to carry out this research and by Section 28 expenditure was limited to an aggregate amount of \$5 million, all of which was to be paid from the Consolidated Revenue Fund. Consequently the basic provisions for research were provided; there remained to be established an organization to carry it out.

III.

The entire nature of government participation in housing in Canada was changed on January 1, 1946, for on that date a completely government-owned corporation—the Central Mortgage and Housing Corporation—was established to coordinate and administer all federal government activity in

¹² *Ibid.*, p. 14.

¹³ This committee was created by Order-in-Council 6074, on September 2, 1941.

¹⁴ *Housing and Community Planning* (Ottawa: King's Printer, 1944).

¹⁵ *Ibid.*, p. 9.

¹⁶ Between 1935 and 1943 only 25,000 units were constructed with government assistance.

¹⁷ 8 George VI, Chapter 46.

¹⁸ 8 George VI, Chapter 46, Part V.

housing.¹⁹ The Corporation took over the work previously handled by the Department of Finance, Wartime Housing, and the Department of Reconstruction.

By Section 27 of its act of incorporation the organization was instructed to conduct research into the business of lending money on the security of real property and this section, along with Part V of the National Housing Act, provided the basis for the establishment of a research section within the new enterprise. The purpose of economic research as conceived by the Board of Directors of the Corporation was for the assembly and interpretation of existing, and the development of new, factual information concerning housing and related subjects in Canada and in other countries.²⁰ An Economic Research Department was therefore established and fitted into the organization as responsible to the President and the Board.

IV.

The Economic Research Department was established in the spring of 1946 and although it is continually being reorganized its major operations are at present with a few changes very much as they were at the time of its organization. The department is divided into four sections: statistical, housing, mortgage research and land economics.

The statistical section is responsible for the statistics of the current operations of the Corporation. In so far as C.M.H.C.²¹ undertakes direct construction, information on operations is readily available from internal divisions, but for statistics of its major activity—that is, participating with lending institutions in the financing of individual home construction, it is necessary to get reports for each loan from each lending institution.

Since information is collected for all new construction with some form of government assistance, there is a large amount of detailed information available covering more than 100,000 housing units. Unfortunately, these data now so readily available on I.B.M. cards and the relationships which could be

obtained from them (for example, of income and size of house) have not as yet been fully analyzed for publication.

The division of housing research had undertaken four major projects: (1) publication of a quarterly entitled, *Housing in Canada*, (2) forecasting housing demand, (3) publishing a review, *Housing Progress Abroad*, and (4) preparing a major volume entitled, *Residential Real Estate in Canada, 1919-1949*.

The quarterly, *Housing in Canada*, first published in October 1946, has as its stated purpose "to provide factual information which will afford as complete and current a picture of the housing situation as possible."²² Since its first issue, as data have become available, the publication has been enlarged and extended. It contains statistics on population trends, house-building activity, publicly-assisted housing, real estate lending, building materials, building labour, building costs and the building industry. The purpose of the publication is to make available in convenient form all information of interest to those concerned with Canadian housing.

The second operation of the division, forecasting housing demand, has developed more slowly—the fourth forecast having been made in 1951. The methods of forecasting are being developed and checked at all times and there is still difference of opinion as to how it should be done. At the moment it is largely an empirical process, based on information gathered throughout Canada, tempered by the opinions of top housing officials.

The publication, *Housing Progress Abroad*, reviews housing in five countries—the United Kingdom, Australia, Sweden, the Union of South Africa and the United States. Each issue is devoted to a particular subject such as rent controls, construction costs, *et. al.*, as they differ in these countries. Naturally, it is merely a compilation of data provided to the Corporation by various foreign government agencies. The precise value of the publication has been questioned but the National Housing Act specifically requires that this type of research be carried on.

Finally, the staff in this section worked for three years on a book entitled, *Residential Real Estate in Canada*,²³ which was published

¹⁹ 9-10 George VI, Chapter 15.

²⁰ *Central Mortgage and Housing Corporation, an Outline of Its Purposes* (Ottawa: Central Mortgage and Housing Corporation, 1948) p. 23.

²¹ In keeping with prevalent practice the Central Mortgage and Housing Corporation has been reduced to C.M.H.C.—its most common appellation. C.M.H.C. administers nearly all operations of the Canadian government in housing.

²² *Housing in Canada* (Ottawa: Central Mortgage and Housing Corporation, October, 1946), p. 3.

²³ O. J. Firestone, *Residential Real Estate in Canada* (Toronto: University of Toronto Press, 1951). I have reviewed this book in somewhat more detail in the March 1952 issue of the *American Economic Review*.

by the University of Toronto Press early in 1951. This book provides factual material on the nature and condition of Canadian housing since 1919.

The work of the mortgage research section is of an essentially different nature to that of the other sections. When C.M.H.C. was incorporated in 1946 there was very little information available on the nature and extent of mortgage lending in Canada. Consequently, the section is not concerned with collating existing data, but rather in the current collection of information. This is done by five basic surveys—mortgage lending of lending institutions, mortgage lending by credit unions, mortgage registrations and discharges, individual means of financing equities and means of financing all new housing. The results of these surveys are published—with little analysis—in the annual, *Mortgage Lending in Canada*.

The survey of lending by lending institutions consists of a monthly report from all major lending institutions making mortgage loans—about 170. They report their loans by size, type of property and whether they are for new construction or existing property. Many institutions, feeling that C.M.H.C. may be potential competition for them in the mortgage business, are very reluctant to release this information, so through an agreement with the Dominion Mortgage and Investment Association the 55 largest companies report their figures as an aggregate. Consequently the Corporation does not know how much each individual company lends.

The report of credit unions²⁴ mortgage lending is much less reliable as there are about 3,000 unions in Canada, of which about 1,400 make loans on the security of real estate. Each province has different regulations for their operation and consequently they all maintain different accounting systems. Therefore, the information is not as complete as that of the lending institutions, but it is estimated that they provided 7 percent of the mortgage money in Canada in 1949.²⁵

The survey of mortgage registrations in Canada from 1919-1949 is progressing slowly for two reasons: (1) there are two types of land registration systems operating side by side in Canada—English law and the Torrens,

consequently it is necessary to collect information from a tremendous number of offices; and (2) some opposition has been met to the examination of old files to get the necessary information. The research is important to provide data on individual mortgage lending as opposed to institutional lending and to show the course of mortgage activity over the business cycle. As an adjunct to this survey, in the fall of 1950 a sample was taken of current registrations in Ontario to provide data on the nature of current lending by individuals, governments, and institutions. The results of the survey are published in *Mortgage Lending in Canada, 1950*.²⁶

The survey of equity financing is used to determine how house purchasers currently finance their down payment. This is an important question for policy purposes, because as the conditions of acquiring equity change (as reflected, for example by an increase in second mortgage financing by builders) the officers of the corporation must have some guide on which to base decisions as to whether to change the ratio of loan to lending value or the relationship of lending values to the actual cost of construction.

The final survey, "house financing," is conducted in conjunction with the Dominion Bureau of Statistics. Occupants of newly constructed houses report their principal source of funds for financing the house. With this information, the operating statistics of the corporation, and the results of the other surveys it is possible to classify the entire housing construction of the year by source of financing.²⁷

During 1950 the work of the urban land economics section was largely devoted to the preparation of handbooks of leading housing characteristics of the cities in which C.M.H.C. is operating. Before this work was undertaken, the section was concerned with the classification of land use in western Canadian cities, but the project has been terminated for the present.

In addition to the operations outlined above, the Research Department with the aid of the Dominion Bureau of Statistics carries out a survey of starts and completions, i.e., by actual counts made in the Regional Offices it obtains the number of houses started, in process, and completed in Canada.

²⁴ Credit unions are usually organized on a local basis, to provide credit at low rates of interest for a great variety of purposes.

²⁵ Mostly in the province of Quebec.

²⁶ *Mortgage Lending in Canada* (Ottawa: Central Mortgage and Housing Corporation, 1950), pp. 16-20.

²⁷ *Ibid.*, pp. 78-83.

It is also developing a construction cost index with the assistance of builders throughout Canada and throughout the year a number of special research bulletins are prepared on population trends, current mortgage activities, etc., for distribution as confidential bulletins within the organization.

This, then, is the major work of the Economic Research Department of the Corporation. It is assisted by a Research Committee, which is the liaison between the Research Department and the Board of Directors. This Committee sponsors work in various universities on town planning, building codes and testing materials and carries out specialized requests which relate to research.

V.

Before evaluating the research which is being done by the Canadian government in housing it is necessary to consider briefly the purpose of research organizations within public agencies. Presumably they collect data: (1) to provide the operating staff with a basis for measuring their specific activities in terms of the whole organization's work; (2) to provide information for the better formulation of policy by the Board of Directors; (3) to provide information to the public and academic economists as a basis for their fulfilling their essential and necessary roles as critics; and (4) to allow, on the basis of interpretation from independent sources, facilities for re-evaluating policy.

These functions clearly limit the work of research by the Research Department to the collection of data. This is necessary for within democratic governments there is a strong tradition that policy should be made by the elected representatives (in this case, operating through a Board of Directors) and not civil servants. This in turn raises two questions: (1) Can a Board adequately interpret the data when presented? (2) Who will determine what material shall be collected? The solution to the first question

seems to be in having the director of research serve in a dual capacity—research scholar and policy maker. The most efficient use can be made of the research organization if its supervisor is also on the Board of Directors.

The second question poses more difficult problems. In Canada there has been a strong tendency to collect facts for the sake of collecting data without any consideration as to their usefulness. Knowledge in any field has only advanced when hypotheses have been established, labouriously tested by statistical and empirical research and then rejected or accepted. It is necessary that collection of data be supplemented by the careful establishment of useful hypotheses. An application of the basic tenets of scientific method is needed in government research in housing.

However, hypotheses for testing will only be developed when economists outside the government carefully evaluate the Canadian housing program. The academician apparently has abdicated from his position of critic in this field and by his abdication has allowed to go unexamined (and unchallenged) a major economic and social shift in Canada. There is a need for the development of a theory of government participation in housing against which the changes in the past few years can be assessed and measured.

In 1946 when C.M.H.C. was organized there was little or no information available about housing—now it is quite extensive, for in its task of collecting data the Research Department has done a splendid job. There are, however, still many unanswered questions and it is only when these questions are posed—particularly by critics—in the form of hypotheses, that the Research Department will be best able to perform its functions.

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Sample Study of Residential Distribution of Industrial Workers In An Urban Community

AS a quantitative approach to the study of urban problems and relationships, the residential distribution of a significant economic group of people in a city's total economic structure has been plotted and analyzed in this study.¹ This study includes those individuals who, though not residing within the immediate urban area, do work there daily; and thus have a closer tie with and effect upon the city than those who occasionally appear upon the urban scene as part of the broader urban hinterland. The city chosen is Madison, Wisconsin, an urban area of approximately 100,000 population. This study of industrial residences seeks to enlighten Madison's commuting situation, traffic-flow problem, comparable hinterland employment opportunity, and industrial development planning.

The economic structure of Madison has a substantial industrial component employing nearly 10,000 people. Its four largest industries have been selected for making this study. Their combined total number of employees approximate sixty-five percent of

the 10,000 industrial workers. Entire payroll lists for each factory have been utilized, but no attempt has been made to break down these lists according to various functions performed by individual plant personnel, upon the assumption that each employee performs a necessary task in the over-all operation of the given industry. Obviously, such factors as degree of mechanized production and complexity of product marketing affects the ratio between factory production workers and office personnel in different types of industries. Such items have not been considered in plotting and analyzing the residential location of this economic group.

The three industries plotted² are: a large meat processing plant, Oscar Mayer and Company; a machine tool concern, Gisholt Machine Company; and a battery manufacturer, Ray-O-Vac Company. Table I shows the various categories into which the employee lists have been subdivided for comparison.

² The employee list of Ohio Chemical & Surgical Equipment Company, Madison's fourth largest industry, was analyzed but not plotted because its residential distribution was strikingly similar to that of the Ray-O-Vac Company.

¹ Summer of 1949 at Madison, Wisconsin.

TABLE I—LOCATIONAL DISTRIBUTION OF WORKERS

| Residential Location | Oscar Mayer and Company | | Gisholt Machine Company | | Ray-O-Vac Company | |
|--|-------------------------|-------|-------------------------|-------|-------------------|-------|
| | No. | % | No. | % | No. | % |
| 1. Madison (including Shorewood Hills, Lakewood, Maple Bluff, and Monona)..... | 2196 | 68.22 | 863 | 73.45 | 799 | 76.90 |
| 2. Madison Rural Route..... | 156 | 4.85 | 88 | 7.49 | 39 | 3.76 |
| 3. Other towns and villages..... | 800 | 24.85 | 146 | 12.42 | 175 | 16.84 |
| 4. Out-of-state representation*..... | 12 | .37 | 49 | 4.17 | 0 | |
| 5. P.O. Box Numbers, etc.*..... | 55 | 1.71 | 29 | 2.47 | 26 | 2.50 |
| Total..... | 3219 | 100. | 1175 | 100. | 1039 | 100. |

* Items 4 and 5 have been eliminated from consideration and are shown merely because they complete the totals. The smaller number and absence of out-of-state representatives for Oscar Mayer and Company and Ray-O-Vac Company is due simply to the fact that they represent one of several factories in their industries, while Gisholt Machine Company represents the sole factory and home office. Item 5 of the table has no plotting significance and fortunately, is small, thus not affecting the distribution pattern.

General Pattern of Distribution within Madison Urban Area

The percentage of workers residing within urban Madison is sixty-eight percent for Oscar Mayer and Company, seventy-four percent for Gisholt Machine Company, and seventy-seven percent for Ray-O-Vac Company (Table I). The capitol square divides

Madison into two distinct parts. Industrial residences are concentrated in east Madison (see Map). The percentage of residences to the east of the square is seventy-six percent for Oscar Mayer and Company, eighty-six percent for Gisholt Machine Company, and seventy-eight percent for Ray-O-Vac Company. Near proximity to factory site is well

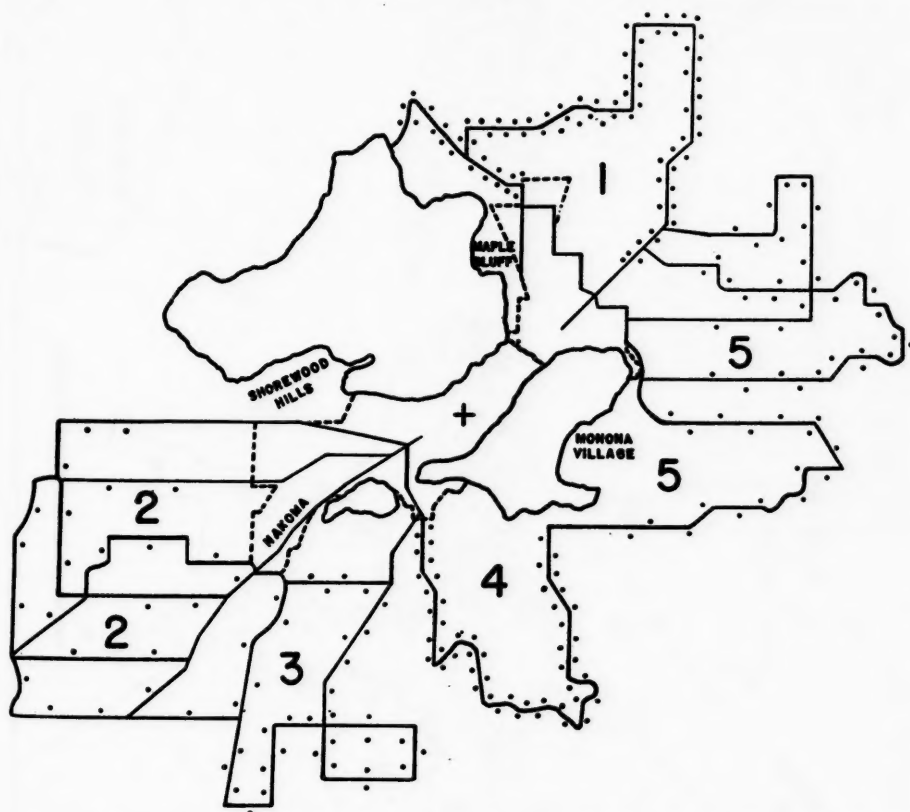
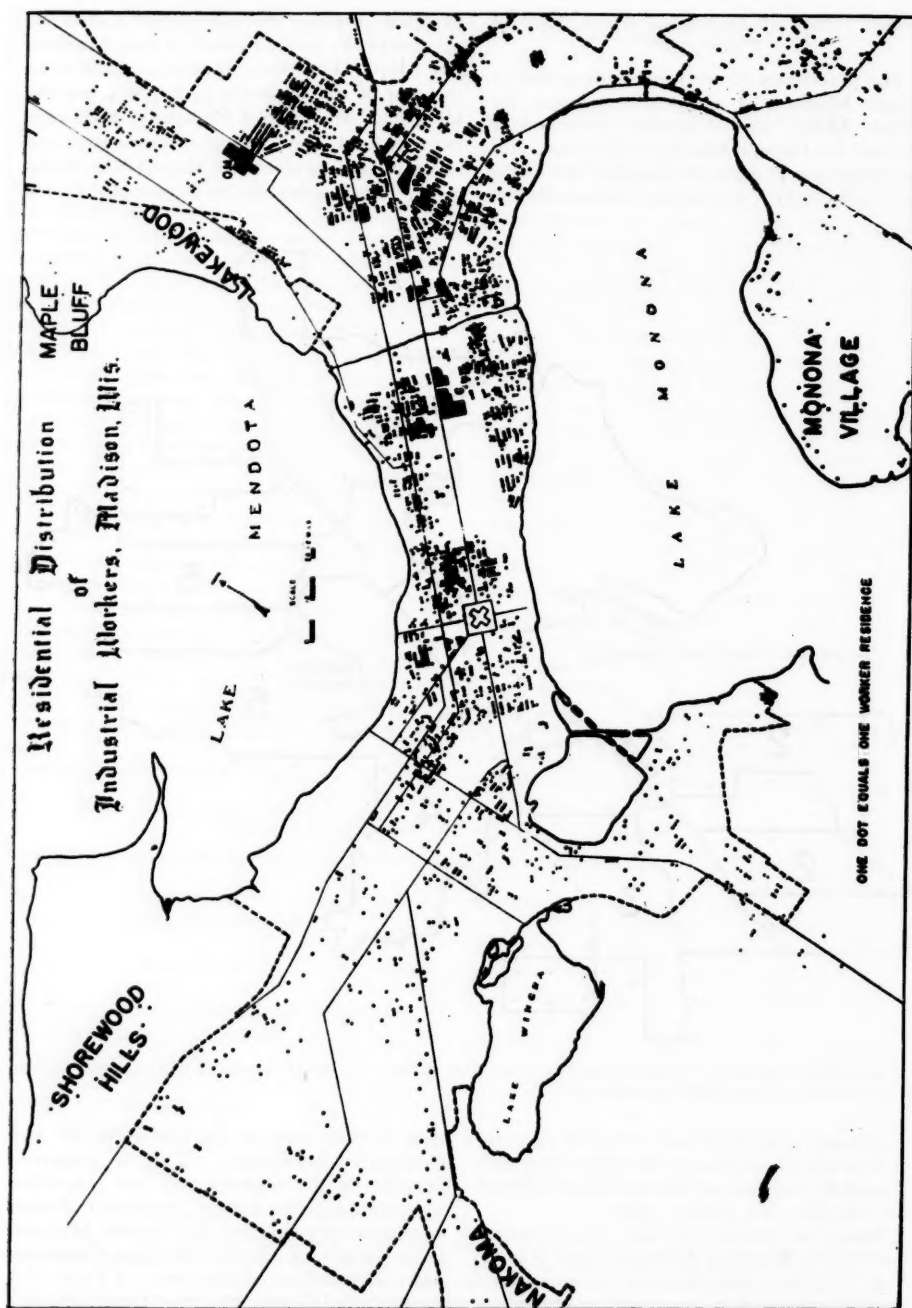


FIGURE 1—INDUSTRIAL WORKER RESIDENCES ALONG MADISON, WISCONSIN R.F.D. ROUTES. RESIDENCES ARE LOCATED ONLY IN RESPECT TO THEIR DESIGNATED ROUTES.

illustrated in all three and especially accentuated in Madison because of traffic congestion caused by the narrow isthmus which divides the city into two distinct parts.

Except for greater east side concentration, the Gisholt Machine Company and Ray-O-Vac Company analyses show no sharp local concentrations other than near the immediate factory sites. A more evenly-dispersed pat-

tern prevails than in the Oscar Mayer and Company distribution. This is primarily because of the character of the respective industries and the higher proportion of total employees drawn from the Greater Madison labor supply by Gisholt Machine Company and Ray-O-Vac Company. (Table I.) Apparently, Gisholt Machine Company and Ray-O-Vac Company have an employee



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preference among the industrial residents of the Greater Madison urban area. Two factors are: (1) seasonal employment and (2) specific-job selectivity.

Seasonal employment has a stronger attraction for the town and village worker, none for the city worker. Oscar Mayer and Company has more to offer in this respect than do the other two because its heavy season (the winter months) coincides with the slack periods in towns and villages. Though this factor is not fully brought out in Figure 2, based upon the July, 1949 employment lists, the greater proportion of out-of-city employees of Oscar Mayer and Company reflects its closer contacts with this source of labor for its industry.

The potential employee from the city is looking for a particular job which best fits his taste and is within reach of his training.

He is more familiar with various job opportunities within his city and is apt to have more personal contacts for employment of his choice. The potential town and village employee is looking primarily for a job, any job which offers more remuneration than local opportunities afford. If he goes to a large nearby city for a higher wage advantage, his selectivity within that city is less. A difference in educational opportunities between the large city and small towns and villages is reflected in this second factor. Technical shop training for specifically skilled industrial tasks is part of the city educational program, while it is largely lacking in the town and village schools.

Madison Rural Routes

The number of employees from each of Madison's five rural routes appears in Table

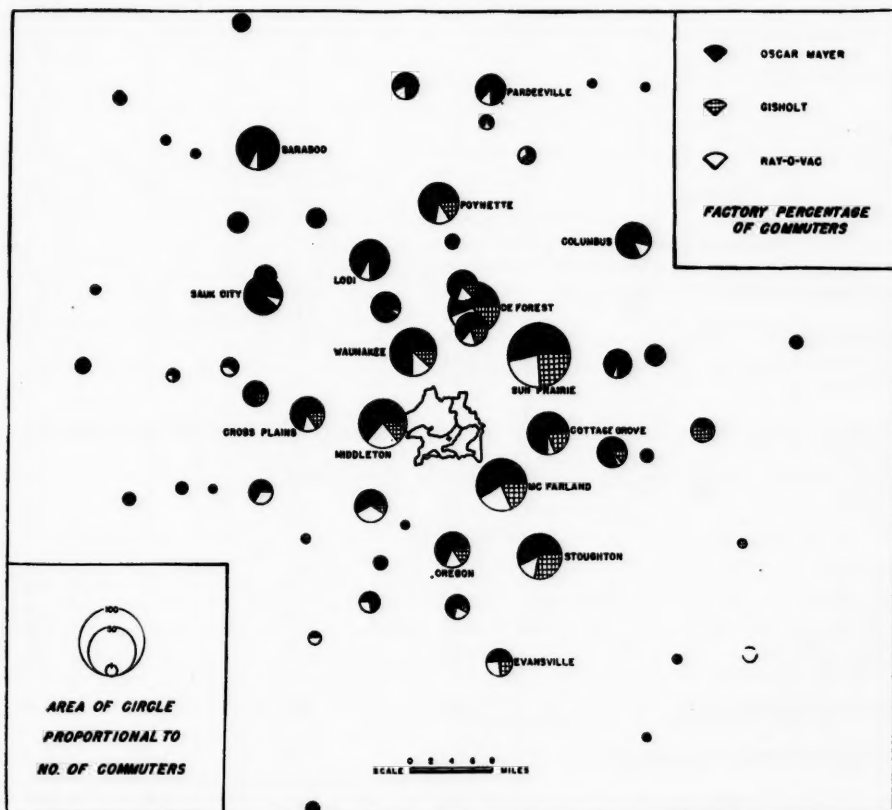


FIGURE 2—Direction and Extent of Commuting from Towns and Villages to Madison Wisconsin Factories.

I, showing the proportion of total employees for each of the three industries that come from the five rural routes. Table II gives the number of employees from each route and their totals.

Proximity to factory site is reflected in the larger total for routes 1, 4, and 5. Total percentages for both urban Madison and Madison rural routes indicate that Gisholt Machine Company and Ray-O-Vac Company with eighty-one percent each (Table 1),

draw upon their more immediate hinterland for their labor needs to a greater extent than does Oscar Mayer and Company, with only seventy-three percent.

Town and Village Locations

Figure 2 and Table II show the direction and extent of commuting to the three Madison industrial plants. Oscar Mayer and Company draws upon these outside towns and villages for twenty-five percent of its total employees, Gisholt Machine Com-

TABLE II—RESIDENTIAL DISTRIBUTION OUTSIDE OF MADISON

| Madison Rural Routes | No. of Employees | | | Total |
|---|-------------------------|-------------------------|-------------------|-------------|
| | Oscar Mayer and Company | Gisholt Machine Company | Ray-O-Vac Company | |
| 1..... | 63 | 8 | 10 | 81 |
| 2..... | 14 | 8 | 1 | 23 |
| 3..... | 24 | 5 | 7 | 36 |
| 4..... | 27 | 12 | 12 | 51 |
| 5..... | 28 | 15 | 8 | 51 |
| TOTAL..... | 156 | 48 | 38 | 242 |
| Town or Village | | | | |
| Sun Prairie..... | 53 | 24 | 22 | 99 |
| De Forest..... | 38 | 11 | 19 | 68 |
| McFarland..... | 38 | 11 | 16 | 65 |
| Waunakee..... | 44 | 7 | 8 | 59 |
| Middleton..... | 37 | 9 | 12 | 58 |
| Stoughton..... | 27 | 14 | 8 | 49 |
| Baraboo..... | 41 | 0 | 3 | 44 |
| Cottage Grove..... | 31 | 8 | 2 | 41 |
| Poynette..... | 28 | 6 | 5 | 39 |
| Lodi..... | 36 | 0 | 3 | 39 |
| Sauk City..... | 32 | 1 | 3 | 36 |
| Columbus..... | 28 | 2 | 4 | 34 |
| Oregon..... | 22 | 5 | 5 | 32 |
| Cross Plains..... | 22 | 5 | 4 | 31 |
| Pardeeville..... | 20 | 0 | 3 | 23 |
| Other Communities Total..... | 288 | 38 | 53 | 379 |
| Average Per Other Communities..... | 5.65 | 0.74 | 1.04 | 7.43 |
| TOTAL..... | 744 | 141 | 170 | 1055 |

pany for twelve percent, and Ray-O-Vac Company for seventeen percent. Sixty-six towns and villages, spread largely over eight counties, are represented at Oscar Mayer and Company. Gisholt Machine Company and Ray-O-Vac Company have commuters from twenty-seven and thirty-four, respectively, covering a proportionately smaller area. From within the radial distance to Baraboo come ninety-three percent of the Oscar Mayer and Company commuters, while ninety-four percent of the Gisholt Machine Company commuters come from within the radial distance to Sauk City. Ray-O-Vac Company, as illustrated in Figure 2, draws upon an area considerably larger than Gisholt Machine Company, but not as large as Oscar Mayer and Company.

The variation between these three industries in extent of commuting finds explanation not only in their contrasting labor requirements (explained earlier) but also by the greater employment opportunities and higher wage structures of Greater Madison in comparison with those of the surrounding towns and villages. A further factor explaining why Oscar Mayer and Company secures labor from within the broadest area is that this company has encouraged commuting by running a daily chartered bus to and from Baraboo, 40 miles from Madison. This company also maintains barrack housing for single male employees, who return to their homes only on weekends and holidays. This latter provision widens the range of recruitment and explains the difference be-

ween the total of 744 daily commuters in Table II and the total of 800 for other towns and villages in Table I.

Summary

The sixty-five percent sampling of the approximate 10,000 industrial employees in Madison bears out several general conclusions. Industries of a seasonal nature and those using large proportions of less skilled workmen recruit their labor needs over a much wider area than industries of steadier year-round employment and those using larger proportions of skilled workmen. The latter industries, conversely, satisfy their employee requirements from within the urban area and its more immediate hinterland. Proximity to respective factory sites is reflected in both local and broader areal patterns.

That these same conclusions would be borne out in other cities of similar, larger or smaller size, and different industrial-commercial component ratios remains to be tested. However, as an approach to urban understanding, analysis of residential distribution of important economic groups appears to have merit. This study of industrial residences enlightens, in particular, Madison's commuting situation, traffic-flow problem, comparable hinterland employment opportunity, and industrial development planning.

GEORGE P. STEVENS, JR.

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Home-to-Work Relationships of Workers Living in Public Housing Projects in Chicago[†]

LARGE-SCALE housing developments and expanded industrial activity in major defense areas have focused increasing attention upon the distance people will travel from home to work places. How far employees actually do travel, or could be expected to travel, to offices and factories, has been the purpose for conducting surveys in many areas where planners have tried to

determine the optimum distance for selecting housing and industrial sites.¹

For the most part these investigations have been concerned with the commuting patterns of suburban or rural workers going to and from large centers of employment, or between satellite towns of metropolitan areas. While these studies usually agree that the industrial worker tends to work close to

[†] The survey on which the material contained in this paper is based was made under the direction of Miss Mary Zahrobsky, School of Social Service Administration Seminar, University of Chicago. Miss Shirley Hillmer, of the Chicago Housing Authority, was responsible for all tables and maps.

¹ A major survey to gather all available information and make further studies of several areas is in the process of completion by the Housing and Home Finance Agency for use in allocating defense contracts.

home,² there is scant information about the home-to-work patterns of low-income workers living in the various areas within large cities where these workers are most likely to find rental dwellings they can afford.

Slum clearance and redevelopment of urban areas will soon involve the relocation of thousands of families from blighted areas in many large cities. In building new communities within the corporate city, planning and housing agencies must select sites with due regard for social and economic considerations as well as civic beauty and improvement. These decisions often are based on what studies show that people *wish* to do and have overlooked the very real limitations of what people *can* do. The present study indicates to some extent what adjustments workers *did* make in both home and work locations.

During 1949 and 1950 the University of Chicago, in cooperation with the local housing authority, made a survey of employment among families living in ten public housing projects in Chicago built for low-income workers. The survey included for each family the following data: (1) previous residence before moving into the project; (2) place of work before moving; (3) changes in place of work after moving; and (4) occupation, industry and income. The data cover the period from 1938 to 1948.

Several limitations are inherent in the study. First, the projects were to a large extent occupied by Negro families, who are at a disadvantage among other workers in securing living accommodations and employment. Second, the projects were built largely in either slum or outlying vacant areas of the city, so that the tenants cannot be regarded as a true random sample of the low-income population. There was, however, a good representation of low-paid occupations in all industries (see Table I and II). Work locations were found throughout the city (Fig. 1), and in most areas the distribution was remarkably similar to the proportion for all city workers, as indicated in Table III. This is also illustrated in the map showing work locations for all project workers. The most notable exception occurred in the south and the southeast sections of the city where

TABLE I—PERCENTAGE OF PROJECT WORKERS EMPLOYED BY INDUSTRY

| Industry | Total |
|---|-----------|
| Number..... | 5,623 |
| Percent..... | 100 |
| <i>Manufacturing.....</i> | <i>41</i> |
| Metal Products..... | 10 |
| Machinery..... | 9 |
| Food Products..... | 7 |
| Printing and Publishing..... | 3 |
| Railroad Equipment..... | 3 |
| Apparel..... | 2 |
| Furniture..... | 1 |
| Other..... | 9 |
| <i>Wholesale and Retail Trades...</i> | <i>16</i> |
| <i>Transportation.....</i> | <i>10</i> |
| <i>Service Industries.....</i> | <i>8</i> |
| <i>Government.....</i> | <i>8</i> |
| <i>Construction.....</i> | <i>3</i> |
| <i>Communication, Public Utilities.....</i> | <i>1</i> |
| <i>All Others.....</i> | <i>10</i> |

TABLE II—PERCENTAGE OF PROJECT WORKERS EMPLOYED BY OCCUPATIONAL GROUP

| Occupational Group | Total |
|---------------------------------|-------|
| Number..... | 5,623 |
| Percent..... | 100 |
| Operatives..... | 32 |
| Clerical and Sales..... | 21 |
| Services (except Domestic)..... | 15 |
| Laborers..... | 14 |
| Craftsmen..... | 8 |
| Proprietors, Managers..... | 3 |
| Domestic Services..... | 2 |
| Professional..... | 2 |
| Not Reported..... | 3 |

there is the greatest concentration of the Negro population. The largest group of workers for both the projects and the city was found in the central business and manufacturing district. This area not only includes the "Loop" but also the surrounding areas roughly within a radius of from 2 to 3 miles.

More than half of all project workers travelled a distance of less than 4 miles, as shown in Table IV. However, significant differences for various projects indicated the relative influence of neighborhood attachment, availability of housing and racial factors. The map plainly shows that most tenants moving into the projects came from the close-in areas.

The data relating to changes made by these families in their living and work places

² J. Douglas Carroll, Jr., "Some Aspects of Home-Work Relationships of Industrial Workers," *Land Economics*, November 1949, p. 414. See also, Wilbur C. Hallenbeck, *American Urban Communities* (New York: Harper & Brothers, 1951) pp. 229-235.

WORKERS

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100

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WORKERS

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Total

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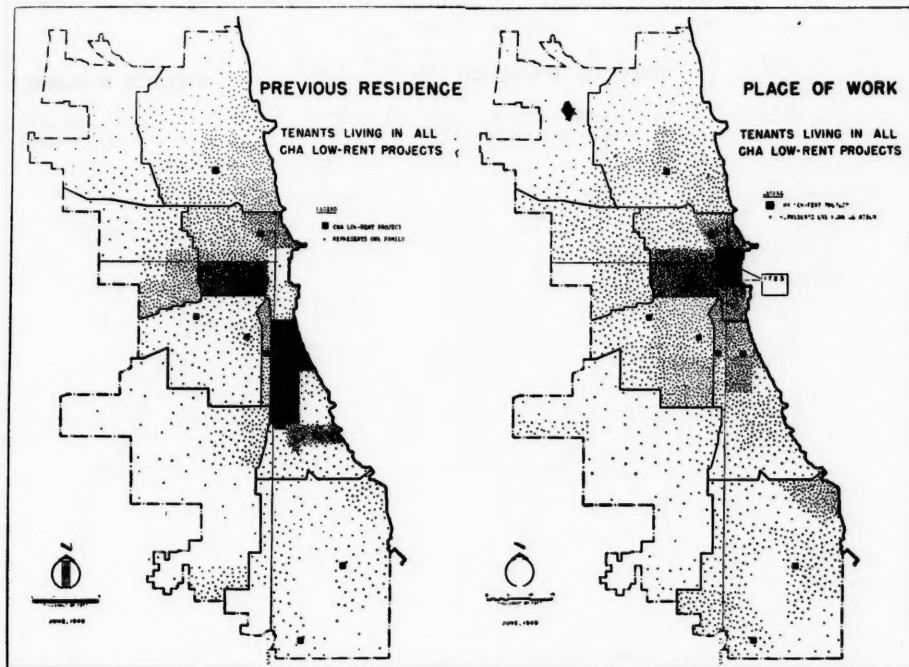
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can be presented by the projects which clearly demonstrate the three main situations as follows: (a) central slum area; (b) non-blighted residential area; (c) outlying open area.

(a) Central Slum Area

Two projects built several years apart, during which interval the racial occupancy of the area was in transition, serve to illustrate this situation in the near west side. The first project to appear was Jane Addams Houses. This was a 1000-unit development entirely surrounded by substandard dwellings largely occupied by white families which establish the racial occupancy pattern for the project. Five years later, Robert H. Brooks Homes with some 800 units was built adjacent to the first project. The residents in the immediate area had by then become predominantly Negro and this was reflected in the project tenancy.

The differences in previous residence and places of work can be clearly seen in the accompanying maps for these projects. Most of the tenants at Addams came from the neighboring area within 2 miles of the

project on an east-west axis following the principal transportation lines. More than half of the tenants were within the same distance from their jobs at the time of the survey.

In contrast, tenants at the Brooks project have moved mainly from the south side slum areas from 3 to 6 miles away, and poorly connected with the west side. These tenants were Negro families living under the worst housing conditions to be found in the city. Work locations were also notably different from those of the Addams workers. The pattern for workers at Brooks was fairly well scattered within a radius of 5 miles, while at Addams it was confined to a much smaller zone as shown in the map.

This difference occurred despite the fact that the area contains one of the oldest and principal manufacturing centers of Chicago. Many of the tenants at Addams had worked in this area before so that moving to the project had affected the distance to their work places very little. However, relatively little employment had been found in this area by tenants moving into Brooks, although

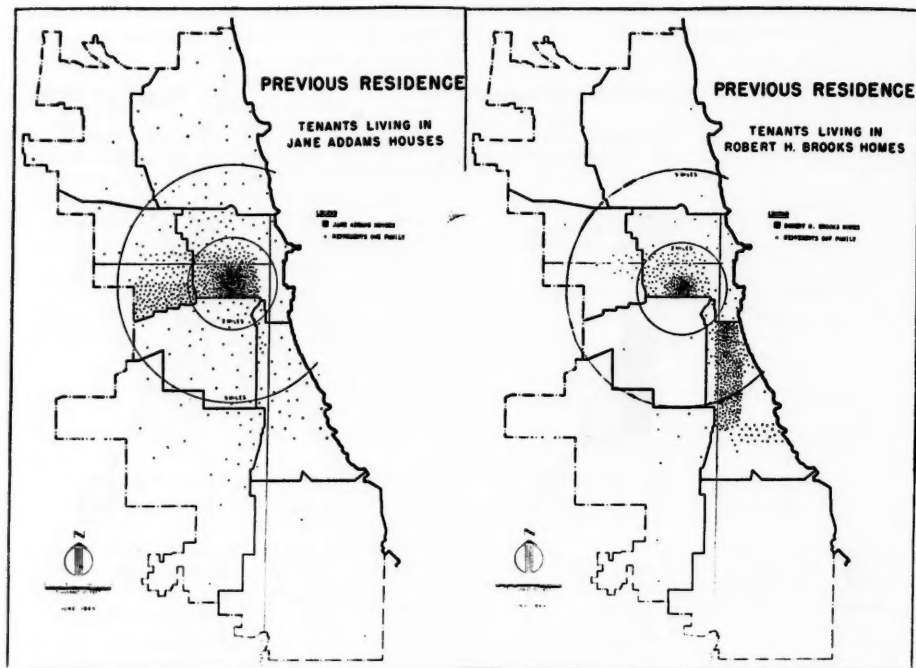


TABLE III—WORK LOCATIONS OF PROJECT AND CITY WORKERS BY AREAS

| Area ¹ | Project Workers | | City Workers |
|-------------------|-----------------|--------------|------------------------|
| | Before Moving | After Moving | |
| Number | 5623 | 5623 | 1,200,000 ² |
| Percent | 100 | 100 | 100 |
| Northwest | 2 | 1 | 4 |
| Northeast | 10 | 9 | 11 |
| Central | 37 | 43 | 50 |
| West | 21 | 18 | 22 |
| South | 12 | 12 | 4 |
| Southeast | 13 | 14 | 6 |
| Southwest | 5 | 3 | 3 |

¹ General geographical areas formed by principal base lines.

² Illinois Department of Labor, 1949; excludes government workers, self-employed and employees of establishments employing less than 8 persons.

TABLE IV—PERCENTAGE OF PROJECT WORKERS BY DISTANCE TRAVELED TO WORK

| Distance | Total, All Projects |
|------------------------|---------------------|
| Number..... | 5,623 |
| Percent..... | 100 |
| Less than 2 miles..... | 31 |
| 2-3.9..... | 24 |
| 4-5.9..... | 18 |
| 6-9.9..... | 10 |
| 10-19.9..... | 11 |
| 20 miles or more..... | 1 |
| Not reported..... | 5 |

considerable effort appears to have been made in that direction. Generally, tenants at both projects *tried* to work closer to home, but note must be made of the fact that some of the workers at Brooks actually changed to jobs more than 10 miles away in the southeast part of the city where steel and heavy industry plants offered new opportunities for Negro employment. Virtually *no* workers from Addams were found in this area.

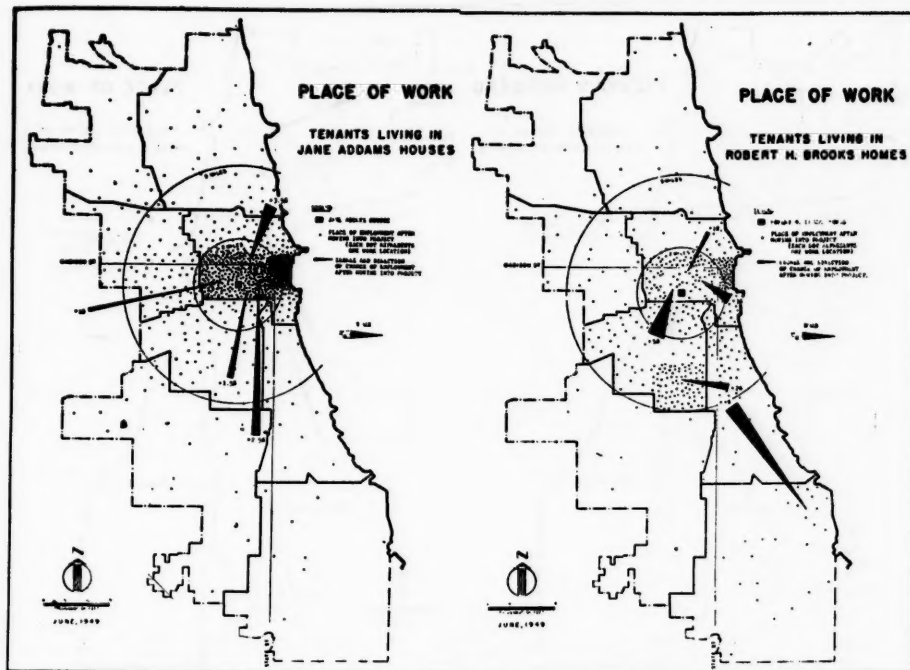


TABLE V—MEDIAN DISTANCE TRAVELED TO WORK BY PROJECT

| Project | Miles From Downtown | Median Mileage |
|-------------------|---------------------|----------------|
| All Projects..... | | 3.6 |
| Altgeld..... | 16.5 | 8.6 |
| Trumbull..... | 15.3 | 5.1 |
| Lathrop..... | 5.4 | 3.6 |
| Wells..... | 4.6 | 4.0 |
| Wentworth..... | 4.1 | 3.5 |
| Lawndale..... | 3.8 | 3.2 |
| Bridgeport..... | 3.1 | 2.7 |
| Brooks..... | 2.5 | 3.0 |
| Addams..... | 2.5 | 1.5 |
| Cabrini..... | 1.5 | 1.6 |

(b) Non-Blighted Residential Area

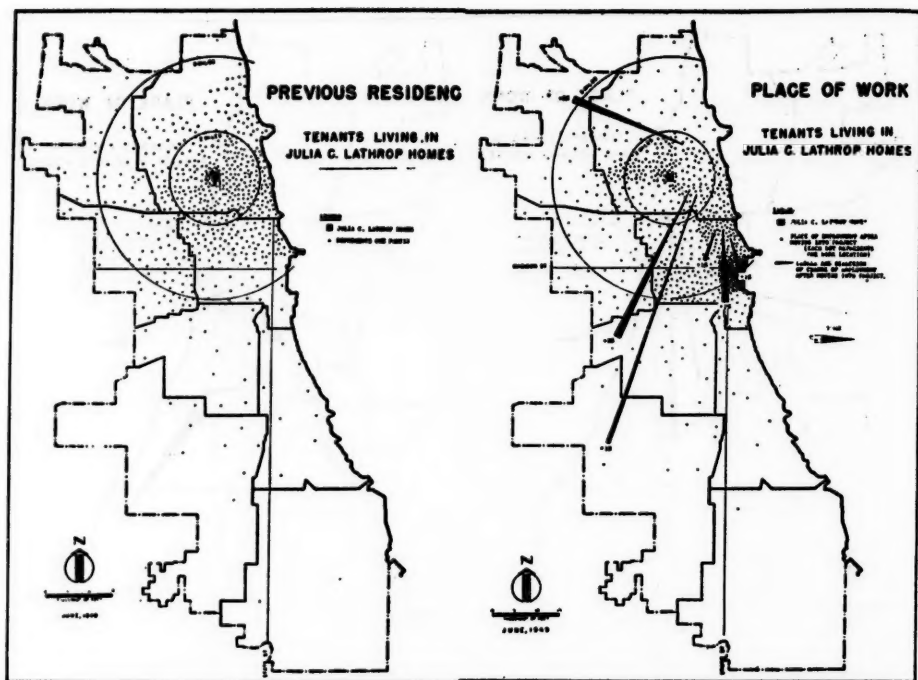
Few projects were built in the off-center residential areas where general dilapidation was not in evidence, but Julia C. Lathrop Homes was a good example of this situation. Lying within easy access to a manufacturing belt running along the river on a northwest diagonal, this 900-unit project was the only low-rent development in the northern part

of the city. It was surrounded by old but stable neighborhoods occupied entirely by white residents. Interspersed through the area, however, were ribbons of blight and scattered patches of decay along the main avenues and at the major intersections. The previous residence and place of work for tenants moving into this project are shown in the maps.

While a strong affinity for previous neighborhood is found in the pattern of project move-ins, the distribution is spread evenly within a radius of 5 miles. A considerable proportion of workers can be seen to have traveled to jobs more than 4 miles from the project. Few shifted their places of work to the 2-mile zone where many employment opportunities were available. This must be explained, at least in part, by the fact that the northern part of the city enjoys a wider selection of rapid public transportation routes than is found in other non-suburban sections.

(c) Outlying Open Area

One of the last to be built among the projects included in the survey, Altgeld Gardens,



with 1500 units, was located in a sparsely populated section in the extreme southeast part of the city. Moving to this project meant for almost all tenants a major change in neighborhood orientation and travel habits. Occupancy became predominantly Negro, and the shifts in locations made by these tenants are indeed unusual as the map shows. *More than 80 percent of the tenants had previously lived 10 or more miles distant from the project.*

It is true, of course, that the dominant steel industry in this area offered new employment opportunities close to the projects, but these were not without limitations. Thus, it can be seen that the shift to jobs in this area is not as great as might have been expected with the extreme change in location of residence. Even more remarkable is the equal shift in job locations *away* from the project.

Summary

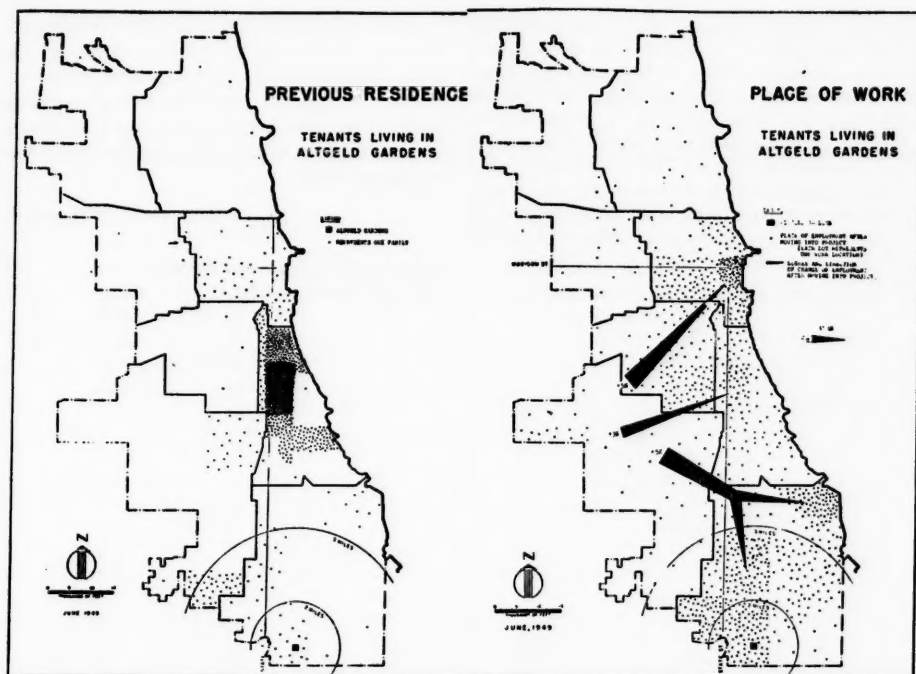
In general, the survey establishes the close home-to-work relationship found in other studies. In a survey of industrial workers in

the state of Massachusetts³ the median distance from home to work was 2.9 miles for plants located within the Boston metropolitan area. In London, England, a median distance of 3.3 miles was found between places of employment and government housing projects.⁴ Here, too, was found a noticeable variation between outlying and close-in projects, with workers in suburban areas working farther away from home than those in projects which had replaced slum tenements.

The findings of this study indicate, however, how far workers actually *did* move from previous living and work places when good housing they could afford was made available. There was a clear indication that workers minimized the change as much as possible, particularly in the central slum areas where factories were closest to home locations. But when good transportation was available this tendency was less noticeable, as was seen among tenants at the

³ J. Douglas Carroll, Jr., *ibid.*, p. 419.

⁴ Kate K. Leipmann, *The Journey to Work* (New York: Oxford University Press, 1944), p. 190.



Lathrop project. It would seem that families try to retain their neighborhood affiliation as far as possible, but that the advantages of modern low-rent apartments will become the deciding factor in making a change.

It was demonstrated that among Negro families the need for good housing is so great that workers will travel long distances to work and change neighborhood completely to obtain adequate dwellings. After moving to the projects, Negro workers changed jobs in all directions, taking advantage of the widening opportunities for their employment occurring during the postwar period.

On the whole, there was relatively little shift in job locations toward the projects, although the tendency in this direction was certainly present. This is a slow process of adjustment, and there were indications that changes were not made until lay-offs occurred and then efforts were made to find new jobs closer to the projects.

The findings suggest the following conclusions as a guide for planning in large metropolitan communities: (1) Low-income workers find employment in almost all areas where public

transportation is available. (2) Families living in substandard housing will move to good low-rent housing even though they must travel farther to work. (3) After old neighborhood ties are severed, workers reorientate to a new community and seek jobs closer to home.

This study points toward the possibilities of planning for a better balance between living and work places for the low-income urban worker. In rural areas commuting distances can be feasibly greater than in cities. In one town being planned in New York state,⁵ industrial workers are expected to travel as far as 25 miles from surrounding communities. Few industries in Chicago and similar high-cost areas would be likely to attract sufficient low-income workers from such distances. If, however, good rental housing within the means of these workers were made available in outlying urban areas, perhaps there is good reason to believe that they would travel considerably farther than the distances adhered to under the usual housing conditions found in low-income groups. A distance of

⁵ "Yalesburg," *The New York Times*, March 23, 1952.

up to 15 miles does not seem unfounded on the basis of the facts disclosed for the workers at the various projects. Although the trend of industry toward far outlying areas around Chicago has been reflected in a 20-percent rise in values for modern plant sites, values in the old factory districts have not declined.⁶ This suggests that a shortage of low-income workers may be experienced in the suburban areas where new housing is beyond the means of even many middle-income families.

⁶ Olcott's 1952 *Blue Book of Land Values* (Chicago).

At the same time, it has long been suggested that the relocation of families displaced by slum-clearance and redevelopment programs would be greatly facilitated by building projects in open urban areas, many of which are within reasonable distances from the new industrial sites.

ROBERT F. WHITING

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Book Reviews



American Urban Communities. By Wilbur C. Hallenbeck. New York: Harper & Bros., 1951. pp. 617. \$6.00.

The Social History of a War-Boom Community. By Robert J. Havighorst and H. Gerth Morgan. New York: Longmans, Green & Co., 1951. pp. 356. \$4.00.

Willow Run: A Study in Industrialization and Cultural Inadequacy. By Lowell J. Carr and James E. Stermer. New York: Harper & Bros., 1952. pp. 406, illustrated. \$5.00.

The outline of Professor Hallenbeck's text differs in important respects from those of earlier texts in urban sociology such as those of Gist and Halbert or Queen and Thomas, although basically it covers familiar ground. Part I, "The Rise of American Cities," wrestles manfully with a definition of "what makes a city a city," refusing to escape "by stating what a city is not" or merely describing "its predominant characteristics." The chapter in this part on "Varieties of American Cities" brings together in short compass the efforts of Harris, Leiffer, Thorndike, and Gillen not only to classify but to rate cities.

The most refreshing section of the book is Part II, "External Interrelationships of Cities," an attempt to place the city in its region. Particularly interesting is chapter 6, "Cities in Relation to the Flows of Energy and Materials," "wrought out" by a former student, Professor Oliver Loud of Antioch. This is a chapter on "ecology," but not merely as a term borrowed by sociologists for analogical use in the search for patterns of urban community development. It seeks to apply the concepts of "succession," "climax condition," "dynamic equilibrium," "maximum biological potential," to the urban community itself and to the larger region of which it is a part and the dynamics of which it influences profoundly. In this part, too, the author shows an appreciation of the work of Odum, Mumford, and the National Resources Committee (though not of Geddes),

which he does not seem to relate to his more conventional later treatment of Suburbanization, Decentralization, and Metropolitan Communities.

Professor Hallenbeck's original concern with cities was through church extension and home mission work, surveying and planning for religious facilities. The jaded urbanist is refreshed at many points by his introduction of illustrative material from these experiences. Since sociology claims to be the matrix of the social sciences, he deals with the economic bases of cities and recognizes government as an important form of social organization (omitted in Lynds' *Middletown!*) and politics as a cultural institution. He cannot be blamed if his treatment of these aspects of urban communities is uneven. There is some alternation between the statement of jejune "laws of suburbanization" and detailed presentation of varying census definitions of metropolitan areas.

In the discussion of retail trade, distribution, services, and suburbanization I find no reference to the widespread establishment of department store branches in outlying centers. The Park-Burgess ring theory of expansion is presented as definitive on page 153, the Hoyt sector theory on page 544, without clear recognition that the latter is an important modification of the former. Garden City, Long Island, could not have been influenced in any way by Howard's book of 1898, since it was laid out by A. T. Stewart in 1869. Such slips as these merely prove again how hard it is for a specialist in any one discipline—whether it be a sociologist like Hallenbeck or an architect like Gallion—to write a balanced book on urbanism. This at least is a better book than most and should prove a useful text.

* * * *

A number of social scientists were alert at the beginning of the war effort to see that war-boom communities would afford fascinating case material for the study of urban institutions in shock. They got research grants and deployed teams of graduate

students as participant-observers. One such "capture and record" study, the powder plant at Charlestown, Indiana, was briefly reported by Field and Stoner in *Public Administration Review* as early as 1943. There now appear two more elaborately documented accounts. While they are broad social histories, housing is inevitably the subject of chapter one. A team from the University of Chicago observed Seneca, a sleepy town of 1,200 on the Illinois River, where 157 LST's were built in three years, involving a peak employment of over 10,000 and a five-fold increase in the population of the town. Havinghorst's team predicted that the success of any institution or service in meeting the demands of the war-boom would depend upon (1) physical and economic facilities, (2) local institutional experience, (3) leadership, and (4) the attitudes of the people toward changes in that sector. Housing rated nil on (2) and negatively on (4). The story is told fluently, urbanely, objectively. It is offered, not as a contribution to social theory, but as a case report of frictions and conflicts among federal agencies (the "federal pecking order" had Navy at the head and FPHA at the foot) and between them and local officials.

* * *

By contrast, the University of Michigan study of Willow Run is more pretentious as a contribution to social theory (toward "metakinology," new "science of change") and is powerfully charged emotionally. It is a bitter diatribe against "too little and too late!" The basic issue is said to be: "which interest group should bear the major burdens of the drastic changes under way, the Folks in Possession or the bomber workers." Observers living in trailers could hardly know that the complexities of the situation caused the President to despatch Mr. Delanc, chairman of the NRPB, to the area in an attempt to coordinate the competing federal agencies with the forces resisting change—real estate boards opposing public housing, county commissioners resisting shifts in political power threatened by in-migration, industrialists disavowing responsibility for change outside the plant. Willow Run was a mess, and it is well that the story is recorded, but one wishes for some of Havinghorst's urbanity in the telling.

CHARLES S. ASCHER

Brooklyn College



The Conservation of Ground Water. By Harold E. Thomas. New York: McGraw-Hill Book Company, Inc., 1951. Pp. 327, xv. \$5.00.

Water is rapidly becoming a problem of critical importance in many parts of the United States. With this situation, it is probably only natural that many articles and books have appeared during recent years regarding the water problem and that many of these have used a somewhat sensational approach to the subject. This book comes as a welcome addition to the literature on water problems. It comes as a welcome addition because it is based on a thorough survey and analysis of available information on the present development and use of the ground water resources of this country. The author is a trained technician and a careful and cautious analyst. He refuses to overdramatize the issue; he presents his facts in a straightforward manner; and he freely admits that no conclusions should be drawn on some points until more data are available.

The author starts with a review of basic hydrological principles and data. He then proceeds to a discussion of the variety of problems that have arisen from ground-water development and use in some 70 different areas located in 35 states. This case-study approach shows the diversity of the ground-water problem and clearly indicates the pitfalls one might fall into by generalizing on the basis of a few examples.

In the last half of his book, the author discusses (1) the effects of agricultural and urban land uses, irrigation and drainage projects, waste disposals, river control, and navigation channels upon water levels and the supply of ground-water; (2) our increasing requirements for water; and (3) current deficiencies and future needs for effective ground-water development. Under this last subject, attention is given to the need for more and better hydrologic data for inventory and other purposes. Consideration also is given to the problems of water rights and public enlightenment. Thomas asserts that many of the established legal concepts on water rights "are now known to be scientifically unsound and should be revised in the light of present knowledge." On the subject of public enlightenment, he makes a plea for a better understanding of the nature and use

of our water resources and of their importance as a factor in the economy. The book is concluded with a summary chapter, "Better Ground-Water Management," by Abel Wolman.

This book provides an excellent inventory of the present ground-water situation in this country. It is only indirectly concerned with economic interpretations, but economists and others will find it a fruitful source book for physical and background information regarding the ground-water situation.

RALEIGH BARLOWE

*Bureau of Agricultural Economics
and Michigan State College*



Human Ecology. A Theory of Community Structure. By Amos H. Hawley. New York: The Ronald Press Company, 1950. pp. 456. \$5.00.

This book is a further attempt to develop "the ecological approach" as applicable to human behavior and sociological problems. The analysis of human ecology emerging attempts to raise human ecology to a discipline akin to plant and animal ecology. Having discussed in some 70 pages the general nature and meaning of ecology, and having differentiated the special field of human ecology, the author turns to certain problems which he believes can be analyzed through an ecological approach. Such problems include questions of natural areas, population distribution, growth, composition, and balance, community structure, and problems of social change and development.

By definition, these types of problems are susceptible to ecological analysis involving action and reaction, cause and effect, balance, and imbalance. The extent to which such an approach is successful depends on the nature of the problem.

While the ecological approach is desirable in a field of study as complex as that of man and his environment, it leaves much to be desired. Hawley attempts a synthesis based on material only partially developed. To employ this approach with limited data and to rely on now limited techniques of measurement might hinder the development of

knowledge on these subjects, particularly if, as some critics of the social sciences maintain, there is lacking satisfactory agreement as to the identity and basic characteristics of the entities to be dealt with in the social sciences. Before the science of plant ecology could be successfully developed, a working agreement on the entities, or units, of the dynamic complex was necessary. Also necessary was knowledge of the basic needs of the units and the mechanisms they employed in satisfying these needs. Ecology has been the elucidation of the effect of the presence and interaction of all, or the more dominant units, upon the mechanisms and need-satisfactions of each and every unit. The implication of the ecological approach is that units have needs proven to be satisfied by mechanisms peculiar to the particular units. We have a long road to travel in the social sciences before we can answer questions raised by this implication.

Plant ecology has been carefully built up from minute fact gathering and the ecological approach used to help integrate and synthesize these facts. In social behavior we still need more factual detail.

Hawley presents a noble effort at explaining how the ecological method can be applied to the problems discussed. If some parts of the discussion do not fit, Hawley claims the youth of human ecology is to blame. This might be the case, but if it is, it will be necessary for the young discipline to mature considerably before it can claim the problem-solving powers suggested.

It should be stated that the author does not propose the ecological approach as a cure-all. Rather, he presents an explanation of an approach which might be helpful in solving and understanding certain sociological problems.

This book and approach may be considered a needed contribution to the field of integrating social studies. Until more valid knowledge of data and a greater grasp of methodological techniques for measurement are available, and until each discipline, including that of the human ecologist, has further explored its own methods and tools, the ecological approach is of limited utility.

HERMAN G. BERKMAN

Chicago Land Clearance Commission



The Dammed Missouri Valley. By Richard G. Baumhoff. New York: Alfred A. Knopf, 1951. pp. 291. \$3.75.

Muddy Waters. By Arthur Maass. Cambridge, Massachusetts: Harvard University Press, 1951. pp. 291. \$4.75.

Mr. Baumhoff has written a valuable and extremely readable book based on his reporting of the Missouri Basin development program since 1945. The opening chapter is concerned with the river basin as a unit for regional planning and development. A major portion of the book (eight of fourteen chapters) is given over to description of the physical, economic, social, political, and cultural characteristics of the region. The last five chapters are devoted to current resource development plans and programs in the Missouri Basin and the experience of the Missouri Basin Inter-Agency Committee as a coordinating body.

The author presents a word picture of the great Missouri Basin which tells the reader much regarding the deep-rooted problems of the region and the conflicting interests which complicate solutions to those problems. There is some doubt, in this reviewer's mind at least, whether Mr. Baumhoff has grasped the full significance of the great open spaces and the sparse population which are important features of his description of the region. It may be that the social cost of space in relation to public services and the fact that acreage is not a usable measure of the size of farm in the economic sense are the sort of fundamentals which are fully recognized only if one has lived and worked in the semi-arid region.

Mr. Baumhoff's description of the evolution of the Missouri Basin water program and the attempts to secure a complementary land program is a particularly noteworthy contribution. Failure of the Inter-Agency Committee to secure coordinated development is evident, and the author points out that an increasing number of opponents of the Valley Authority approach are recognizing the need for some sort of a regional organization. He suggests it may be a Missouri Valley Anti-Authority Authority.

* * *

Muddy Waters tells the reader why voluntary coordination of water development on

the pattern of the Inter-Agency Committee has failed in the Missouri Basin and other river valleys. Mr. Maass has written a scholarly, objective, and damning indictment of the activities of the Army Engineers. He points out that the Corps of Engineers join in the planning of "comprehensive" programs and then file a dissenting report after which the "lobby that can't be licked" goes to work on Congress. Although a part of the War Department, the Corps of Engineers views itself as consultants to Congress, i.e., as an "agency of the legislative branch." It ignores the President and the Secretary of War in the executive branch whenever it meets its convenience.

The strength of the Corps lies in its powerful lobby and in its close relationship with members of Congress. It has great grass roots strength because it tends to overemphasize the local effects of developments and to ignore broad regional and national influences; it has consistently supported the position of the private utilities in the public power battle; and its cost allocations are always more favorable to the local people than are those of other federal agencies.

After showing that the Corps of Engineers have consistently sabotaged all efforts in the direction of coordinated water resource development, that it has no understanding of economic and social objectives, and that its programs for navigation and flood control do not conform to the true multiple-purpose test, Mr. Maass makes the charitable observation that the Corps has failed to grow to the task facing the Nation in water resource development, management and use.

Both of these books are important contributions to the growing body of literature concerning the Nation's vitally important natural resource problems.

ROY E. HUFFMAN

Montana State College



Rates of Return—Class I Line Haul Railways of the United States 1921-1948. By Sidney L. Miller and Virgil D. Cover. Pittsburgh: University of Pittsburgh Press, 1950. pp. 211.

Instituted at the behest of the Eastern Railroad Presidents Conference, this study

finds that from 1921 to 1948 Class I railroads, which normally carry more than sixty percent of the nation's freight load, earned an average rate of return of only 3.69 percent on the fairly estimated book value of their investment. Generally, railroad earnings throughout the period, and particularly in recent years, fell far below rates of return recognized as fair by the Interstate Commerce Commission or earned by various types of public service industries and by major industrial groups. Substantial reductions in railroads' bonded indebtedness and fixed charges have not reversed the depressed trend of rail earnings. Although many of the study's comparisons and trends are measured by book instead of actual market values, the statistical data are fully explained and interestingly presented, with many accompanying graphs and tables.

While its findings on inadequacy of railroad income are impressive, this book overemphasizes the rate of return to the total exclusion of all other important accounting ratios, and therefore does not present a well-rounded picture of the railroad industry's financial and operating condition. An analysis by individual railroads of the trend of operating ratios and of the ratios of fixed charges to railway operating revenues, tied in with the data on rate of return, would have produced valuable evidence of the extent to which low railway earnings should be attributed to paucity of revenues, inefficient operations or to large and costly indebtedness. But instead of probing deeply into questions of railroad corporation finance, the book turns to matters of bitter controversy covering the whole field of transportation and throws no new light upon them.

Corrective measures suggested by this study for solving the railroads' financial ills are: speedier approval by the Interstate Commerce Commission of requests for advances in rail freight rates (despite the fact that since June 1946 the Commission has granted the railroads 11 separate increases totaling, cumulatively, 78 percent), more enlightened management and labor practices, elimination of subsidized competition, a better integration of all transportation services and adoption of a comprehensive and effective national transportation policy. The final part of the study is less a factual analysis than an expression of points of view, and many students of transportation will

disagree with some of the assumptions and much of the reasoning presented there.

WILLIAM H. JOUBERT

*Tennessee Valley Authority,
Knoxville, Tennessee*



The Transportation Industries, 1889-1946. By Harold Barger. New York: National Bureau of Economic Research, 1951. 266 pp., \$4.

Transportation represents a dynamic force in the development of the American economic system. As that economic system has grown and changed, the amount of transportation service and the means of travel and shipment used by Americans have changed. This transformation has been particularly great since the late 1880's, a period when railroads were still building furiously and enjoyed a practical monopoly of domestic transportation and first were made subject to federal regulation. Now the National Bureau of Business Research has furnished us with a statistical picture of the evolution of our transportation system in the decades between 1889 and 1946.

Some of the questions which Mr. Barger and his associates in the NBER endeavor to answer quantitatively are: How much transportation service do we use? How much traffic moves and who carries it? How has transportation's place in the American economy altered since 1889? How have the roles of different agencies—railroads, waterways, highways, and more recently airways—varied with the passage of time? What can we say about trends in employment and productivity, in technological progress, and the return to human effort?

It was found that the transportation industries have for some decades occupied a relatively declining segment of the national economy. Thus, income originating in transportation represented 8.6 percent of the total national income in 1889, 7.5 percent in 1929, 6.3 percent in 1939 and 5.5 percent in 1949. The difficulty with this conclusion is that the figures include only commercial transportation. Were one to add the large amounts spent for private trucking and the private car, including all services ancillary to private highway transportation, the result might be substantially different. But this

serves to bring out one of the fundamental changes in our transportation system which has occurred in the last thirty years, namely that the growth of private transportation has been more rapid than that of public commercial transportation, especially in the passenger field.

Combined passenger and freight traffic of all commercial agencies (land, water and air) grew five times during the half century between 1889 and 1939, and almost doubled once again between 1939 and 1946. But such aggregates conceal the varying fortunes of different agencies, and especially the marked shifts that have occurred from older to newer forms of carriage. Certainly one of the oldest branches—coastwise shipping—is as lusty as it ever was. And a relative newcomer—the electric railway—is already old: it rose to maturity, decayed, and practically disappeared within sixty years. Yet these are exceptions. For the most part the newer agencies have grown rapidly, and the older ones have expanded only slowly or have actually contracted. Two of the fast-growing adolescents are pipelines and airlines. Where waterways could be adapted to bulkcarriage, as on the Great Lakes and inland waterways, they expanded; but water transportation in the aggregate barely held its own.

Statistics employed by the National Bureau indicate that 1920 was a peak year for freight and passenger service, and that thereafter freight traffic did not keep pace with commodity output, while passenger traffic did not regain 1920 levels until World War II. Only part of this decline in growth is to be explained by the shift to private carriers. The authors make much of this point but fail to compare this retardation with corresponding trends of population, employment and output for the nation as a whole. It would not be hard to show that declining rates of growth of these factors have accompanied and been partly responsible for declining rates of transportation development. Some distortion in trends stems also from the fact that the series employed by the NBER ends with 1946, a year in which transportation shortages engendered by World War II had not yet been overcome.

These changes in the relative position of carriers are reflected in the statistics of employment. In 1889 fewer than a million persons were employed in producing transportation services, and four out of five of

these worked on the nation's railroads. By 1920 total employment had risen to more than 2½ million, and the proportion of these who worked for the railroads had not greatly changed. In 1946 not quite 2½ million persons were employed in transportation, and only about half of them were railroad workers. Today highway transportation employs as many workers as did the railroads in 1889, and airline employment is now as large as was waterway at the beginning of the period studied.

With considerable consistency traffic during the six decades rose more rapidly than employment. As a result, output per worker of transportation service in 1939 was three times, and in 1946 four times, the 1889 level. In the fifty years between 1889 and 1939 productivity in the transportation industries increased at an average annual rate of 2.2 percent. For a major and well-established sector of the economy, this is a rather rapid increase. Over the same period the annual gain in output per worker in manufacturing was 1.8 percent, and in the extractive industries (excluding oil and gas wells), 1.6 percent. The newer industries showed the sharpest gains in productivity, conforming to Solomon Fabricant's observations with respect to manufacturing industries: among the young, large increases both in output and in productivity are common; among the more mature, the growth of output is retarded or ceases altogether, while productivity changes are quite moderate. In the case of railroads, the great increase in the capacity of equipment contributed to the rise in labor productivity, but cannot account for the entire rise.

Mr. Barger and his colleagues in the National Bureau have appended valuable chapters indicating methods used in the measurement of the physical output of public utilities, especially the weighting of the indices of output on the basis of price of the service and the cost of the factors of production. The methods employed for indexing output appear to be reasonable, though the weighting of railroad passenger traffic on a revenue basis gives this traffic undue prominence in a combined index with freight traffic similarly weighted (railroad passenger revenue per ton-mile of passengers is about 30 times freight revenue per freight ton-mile). The method employed to obtain average haul per ton of freight, which has slowly been lengthening, is incorrect: dividing total ton-

mileage by tons originated fails to take account of duplicate originations among the various carriers, and hence understates the correct length of haul.

Taken as a whole, this is an extremely significant study. It not only supplies data which fill in many of the chinks of transportation literature but the study itself is a graphic and mathematical portrayal of the economic history of transportation over the past six decades.

The characters in this history are raw averages of output, employment, and productivity, yet they present the essential aspects of a story of men and technology engaged in the expanding and ever-changing business of carrying passengers and freight in a modern industrial economy.

W. N. LEONARD

Pennsylvania State College



Land Problems and Policies. Edited by John F. Timmons and William G. Murray. Ames: Iowa State College Press, 1950. pp. 398.

This book is scrupulously limited to the subject indicated in its title. It is a statement of land problems and a probing of policies for handling them. Whatever one's views on agricultural land economics, and the reviewer deplores the tendency to develop this field in isolation from other areas of agriculture and economics, no one will dispute that there is a well-defined field of land policy. This volume treats with that subject by presenting fifteen essays on as many aspects of the land question. They originated in a series of lectures at a Land Economics Institute held at Iowa State College in 1949. Actually, three of the essays were not presented at the sessions of the Institute. These deal with forestry, recreational land use and wildlife management—subjects which agricultural "land economists" seem unhappy about including in their field but which they seem never able quite to let go.

In an introductory chapter Professors Timmons and Murray, who edited the work, state that the objectives of the book are to "delimit land problems," to "appraise land policies," and to "develop alternatives of future action." The book then devotes successive chapters to the objectives of land policy, to population, to the farm land re-

sources of the United States, to farm land use, and to conservation. The next five chapters set forth land problems and policies as they are related to specific uses of land, viz., range land, water resources, forestry, recreational uses, and wildlife uses. The balance of the book, Chapters 12 to 16, deals with general questions of land policy under the titles: "Family Farm Problems and Policies" (the reviewer is at a loss to understand how this chapter crept in), "Public Interest in Private Land," "Planning the Use of Land Resources," "Land Programs in a Policy Framework," and "Building a Land Policy."

The first essay, by Professor Rainer Schickele, is a statement of the objectives of land policy. The reviewer wishes that he might expand it to book length. This essay is particularly strong on the efficiency and welfare norms on which land policy must rest. Professor Schickele also makes a strong case for orienting American "land policy with respect to the land and population problems of the world." Here, however, his argument goes no further than to recommend that American interest in these problems be handled through the machinery of United Nations agencies. This implies a denial of the glaring fact that such orientation should start at home.

This volume is extremely useful in providing a chapter by Dr. Warren S. Thompson, an eminent population expert, on the relation between population and resources. Dr. Thompson's views are that there are serious problems in this area, but that they are manageable. However, he provides a warning that "... the time has come when a *laissez faire* policy as regards population growth cannot safely be followed much longer by any country." (p. 38).

Dr. Sherman Johnson's chapter entitled, "Principles of Land Utilization," includes little that is new. However, it is a solid and useful presentation on the subject, having as its central argument the necessity for measuring economic productivity as a basis for determining future land use.

Dr. H. H. Bennett wrote the chapter on "Use and Conservation of our Farm Lands." It turns out to be little more than an argument for the programs of the Soil Conservation Service. Dr. Bennett accomplishes the remarkable achievement of devoting half his chapter on conservation to the activities of his own organization and not a single line to

the activities of the Agriculture Conservation Program. The discussion under his sub-heading "Misunderstanding" could well be expanded. Professor Jesness in a later chapter, with typical fairness, reports that in 1947 the A. C. P. spent 265 million dollars in conservation payments on two-and-three-quarter million American farms.

President Renne's chapter on range lands is thorough and exhaustive, limited only by space. The same can be said of Mr. Clawson's chapter on water resources. Mr. J. D. B. Harrison's chapter on forestry, while ably done, is set very largely in an international context. Consequently it hardly fits into a book devoted almost exclusively to the land problems and policies of the United States. The chapters on recreation and wildlife are factual statements which play down policy implications.

In his work on family farm policies Mr. Ackerman solves most of his problems by employing a definition which excludes eighty percent or more of American farms from the family farm category. The reviewer is pleased to be informed (for the first time) that Canada embraces a concept of the family farm that "takes in a larger number of farms" than Mr. Ackerman's definition for the United States. The author makes a balanced case for promoting the family farm as a national institution.

Mr. V. Webster Johnson does a very competent job of examining the public interest in private land in his chapter entitled "Planning the Use of Land Resources."

Professor Jesness' chapter on "Land Programs in a Policy Framework" also represents a very good exposition on the public interest. Taking resource use and income distribution goals as a background he examines the problems of taxation, credit, conservation, tenure, and population in a very direct and sound manner.

The final essay in this volume is among the best. Professor Timmons, starting from the base of the past and present conflict and confusion in land policies and programs, reviews the whole field under the title "Building a Land Policy." This is largely a review essay of the contribution of the other authors, but Professor Timmons expands and rounds out some of the topics. His essay gives a unity to the whole volume which, without it, was lacking. He concludes with an appeal for a permanent National Resources Council in the office of the President. The essays in this

volume taken together point up the need for such a development. Professor Timmons should be encouraged that recent events have brought his proposal closer.

This is a challenging and highly useful volume. Iowa State College and the editors are to be warmly commended.

DAVID L. MACFARLANE

Macdonald College, McGill University



Housing Market Behavior in a Declining Area.

By Leo Grebler. New York: Columbia University Press. pp. 265, XIX. \$4.50.

This volume makes a valuable contribution to knowledge of the behavior of a specific housing market, namely, New York's Lower East Side from 1900 to 1950. Far more important, it provides an excellent demonstration of methods by which a vast amount of material can be successfully winnowed from frequently neglected sources.

The book follows the expressed belief of Professor Grebler and the Columbia Institute of Urban Land Use and Housing Studies that progress in urban economics for the present will best be served by collecting and analyzing specific quantified data for small areas, rather than by further speculation and broad generalizations based upon frequently faulty hypotheses.

The volume is a study of the techniques and materials needed for such small area studies. It presents the analytical bases for selection of data, the methodological problems of collection, and the results obtained when their procedures are followed for the specific Lower East Side market.

The data deal with three aspects of market behavior. First, the author describes changes in the housing inventory and its utilization over a 50-year period. He furnishes new and uncommon information on demolitions, including later uses of the sites, on occupancy and the boarding up of units, and on relative rental movements. The second aspect dealt with is ownership. Transfer data are clarified by the separation of bona fide sales from others such as foreclosures or intra-family transfers. Estimates are derived of average turnover and of the duration of ownership. Finally slum ownership is found to consist of small holdings in diverse hands rather than large blocks held by estates or wealthy indi-

viduals. The third aspect considered is the demographic and social bases of demand. Data are presented on the movement of ethnic groups, on jobs, and transportation, and on the social factors and changes in housing standards bringing about residential mobility.

Since this book is the first study of its type, it does not allow one to generalize or draw many conclusions as to what the data infer for general market behavior. The reader expecting conclusions applicable elsewhere is bound to be disappointed. Professor Grebler carefully points out these difficulties—that absence of similar data elsewhere limits knowledge as to whether the changes observed are typical of all areas, of all declining areas or only of New York's Lower East Side. Within its scope, it is, however, complete and creates a source that anyone dealing with problems of declining areas will want to consult. We may hope that, as a result of its pioneering, it may rapidly be joined by others in sufficient volume to give us the necessary comparisons and contrasts needed for better understanding of the housing market.

SHERMAN J. MAISEL

University of California, Berkeley



Coffee, Tea, and Cocoa, An Economic and Political Analysis. By V. D. Wickizer. Stanford, California: Stanford University Press, 1951. pp. 497. \$5.00.

Coffee, Tea, and Cocoa is the first volume in the Food Research Institute's new series entitled "Food, Agriculture, and World War II." Along with succeeding volumes, it is designed to promote clear and reliable understanding of the repercussions of hostilities and measures taken to meet them which reach "intimately into the lives of hundreds of millions of people, affecting their comfort, their health, their very existence" (Director's Preface, p. vii).

Few commodities affect more peoples' lives than those dealt with in this volume. Moreover, Professor Wickizer brings to the study a background of highly pertinent experience and familiarity with his subject matter, having previously published *The World Coffee Economy, with Special Reference to Control Schemes* (1943) and *Tea under International Regulation* (1944). The author draws

rather heavily upon his two previous studies in presenting those portions of his current volume concerned with coffee and tea.

The book will certainly contribute toward a better understanding of the problems that the Food Research Institute's new series seeks to investigate. Professor Wickizer devotes over 100 pages to the problems of producing and marketing each of the three commodities. He discusses at length the past, current and possible future methods of cultivation and brings up to date (1950) the history of various control schemes used to direct the flow of types and quantities of coffee, tea, and cocoa into the principal consuming areas. Economists, political scientists, and government officials preoccupied with the impact of global war and diplomatic relations on the national economies of both the large producing and consuming nations will find Chapters 5, 10, and 15 particularly useful and interesting. Those who will not find time to read the entire book can obtain considerable insight into the problems and subject matter treated by reading the 82 pages comprising Part IV, entitled "Trends and Problems."

While it is a noteworthy research effort, the study does not quite live up to its title; it is concerned much more with description than with analysis. In treating the factors leading to surpluses in the 1930's and wartime and postwar shortages, and the various control mechanisms adopted to cope with them, the author leaves it pretty much up to the reader to provide his own analytical framework in which to pour the abundant factual data. Furthermore, the reader has to finish the book before discovering the rationale for treating the three commodities in the same volume. The author states at the outset (p. 3) that "... many similarities in historical development, production, trade, and use, based on distinctive flavor characteristics, warrant the grouping employed." Frequently thereafter, however, he points out that none of the three is usually substituted for the others and that each has its own array of substitutes; i. e. "cola," "soft," and "milk" drinks for tea and coffee (p. 396) and ice cream, tobacco, cigarettes, etc., for cocoa (p. 402). Toward the closing chapters of the study the author partially justifies his grouping by identifying characteristics common to all in terms of their "contribution to welfare, trade, state revenues, and similar national considerations" (p. 383). Moreover, the relegation of the treatment of costs to an ap-

pendix instead of integrating it with his treatment of other phenomena such as prices, production, and exports lends some disorganization to the discussion of economic factors. Finally, occasional laborious and repetitious descriptive matter, while making for completeness, causes the study to lose direction and clarity.

These criticisms notwithstanding, the book will serve as an excellent reference on coffee, tea, and cocoa economies. In these days of deep concern with Point Four programs, Marshall Plans, and other means of aiding the so-called underdeveloped nations, the appearance of the book is timely. It can profitably be read by economists, political scientists, industrialists, diplomats, politicians, and bureaucrats alike.

JESSE W. MARKHAM

Vanderbilt University



Turning the Searchlight on Farm Policy. By a Conference Committee of 13; O. B. Jesness, Chairman. Chicago: The Farm Foundation, 1952. pp. 82.

In 1940 E. G. Nourse was aroused by subsidy payments to the farmer which threatened "to weaken his initiative and debauch his moral character" and the prospect that we were "turning away from faith in the action of price changes as a regulator of production."

In 1952 he calculates that his worst fears have been fulfilled: "It appears to us that during recent years an increasing number of farmers have been weaned away from reliance on the slower methods of analysis and adjustment in the pursuit of economic equality and have yielded to the lure of governmental aid, politically influenced."

Time and economic change—at least since the turn of the century—never seemed to impress Mr. Nourse very much, and there is little to distinguish his views now from those of 12 years ago. The chief differences may be summarized as follows: (1) sponsorship has shifted from the Brookings Institution to the Farm Foundation; (2) a total of 11 supporting voices and one cracked tenor have joined the chorus; and (3) unaccountably, there appears in the present edition a bob-tailed extract from the Brannan Plan. Otherwise the new statement is essentially a drab re-

visit to Nineteenth Century liberalism. The "Searchlight" operates on pretty low candle power.

Beginning with a history of agricultural policy in the United States, the report launches into an analysis of recent programs, then concludes with a set of recommendations featuring Nine Guiding Principles and a conviction that the authors have done pretty well by the Nation as well as themselves. The Nine Guiding Principles, advanced with a piety normally reserved for the Ten Commandments, promise to be somewhat less enduring than a cotton crop in Lower Slobbovia.

Besides deploring the government's destruction of the sturdy character of the American farmer, the report wags an indignant finger at monopolies and tariffs. Special praise is reserved for agricultural research and education, with the emphasis upon good old reliable statistics. Purely incidental to the main theme of institutional emasculation, some kind of record for short-haul contradiction is established on pages 78 and 79. First, the authors fret about flexibility in program administration because of the hazards of political pressure, then immediately pounce upon the parity formula as an inflexible device which resists such pressure.

Mathematically, the report is 25 percent "sound," give a little or take a little. That soothing word appears 20 times in the 82 pages and, remarkably enough, always in close descriptive proximity to the authors' own opinions. To challenge these opinions (one is warned by implication) is evidence by definition of *unsoundness*. Thus in addition to its general allegiance to the sanctity of economic laws, the report offers a "sound" defense mechanism as a straight bonus. For all who might aspire to become authorities on agricultural policy, this pulpit dictum might be stated: It is not easy to unbutton the mantle of respectability.

This is better armor than armament. Few farmers, or other economic realists, are likely to be affected by the tiresome prattle about the virtues of a free market in an economy already laced with group controls, by no means all of which result from government intervention. Nor is the farmer likely to be attracted by a stop-loss philosophy which would throw him to the price-administering wolves outside agriculture pending a "general and severe depression," when he would then be accorded the status of a ward of charity.

It may appeal to the processor, to the industrialist, to the mouthpiece for selective laissez-faire—but not to the ordinary, working farmer. The agricultural plant of the nation is healthy; if it sickens, an ambulance will still look more inviting than a hearse.

Not all of Mr. Nourse's conferees agree completely with his Victorian treatment. T. W. Schultz, for one, edges his way into footnote immortality, mainly by calling attention to the role of money in modern economic systems.

Chiefly though, it is Frank J. Welch who voices the only real dissenting views about the divinity of the free market. Dean Welch emerged from Wonderland as a child and has been stalking about among the painful incongruities of life on this planet ever since. That he too finally collapses into a welter of "soundness" may be excused in light of the sincerity and intelligence of his statements. His inclusion on the panel of 13 economists was the only mistake made by the sponsoring agency in its apparent drive for Classical orthodoxy. The good, alarmingly graying Farm Foundation must be biting its endowed lip for failing to reserve the Welch chair for the ghost of Adam Smith.

JOE R. MOTHERAL

Texas A. & M. College



Alcoa An American Enterprise. By Charles C. Carr. New York: Rinehart & Company, 1952. pp. 291. \$3.50.

Aside from its historical and descriptive material, some of it interesting, this book is essentially a press agent's attempt to explain away those aspects of Alcoa's business past which are related to the building and exercise of monopoly power. Because of its purpose (the writer was Alcoa's Director of Public Relations) the book offers little usable information. It contains no clear picture of the economics and technology of aluminum production from ore to fabricated product, of the role of Alcoa in the world aluminum industry, of the implications of ownership by the Mellon banking family of one-third of the stock, of the character and development of the demand for aluminum.

The discussion of monopoly issues—Alcoa having been for many years the sole American

producer of virgin aluminum—is written in the style of a refutation and hence fails to present an intelligible story of Alcoa's relations with foreign producers, potential competitors, and fabricators on which allegations of overt acts to suppress competition have been based. The dismissal of criticisms as "politically inspired" is inadequate in view of the significant problems of social policy which exist in an industry producing a major war material and controlled by very few firms. The author writes of the time when Alcoa was engaging in restrictive covenants with bauxite suppliers and metal fabricators, and making international cartel agreements: "the little aluminum-making outfit" was so busy trying to manufacture and sell aluminum "that it had no time or inclination to think about monopolization or combination in restraint of trade." Alcoa's Canadian affiliate which participated in the world aluminum cartel is accepted as independent of Alcoa—which makes the cartel's avoidance of the American market meaningless. Similarly, erasing the drive to protect its aluminum interests from Alcoa's efforts to control magnesium development makes the cartel agreement with I. G. Farben and Dow Chemical incomprehensible.

The statement on the relation between war expansion policies of government and a powerful private producer is unsatisfactory. Curiously, while the book sympathetically records Alcoa's complaints against suggested use of subsidies to set up competition after World War II "and similar socialistic measures" it fails to see the subsidy enjoyed by Alcoa in war orders, tariffs, and TWA power.

Evaluation of monopoly is difficult if the focus is on motivation: for example, acquiring a foreign plant in the territory of a rival may augment capacity and at the same time be a forceful threat. The issue is not whether any single overt act *could* have had a non-aggressive purpose, but what pattern of social and economic power has developed in major industries, and what are the effects on employment, income distribution, technological growth and on diplomacy and democracy. Today with Alcoa accounting for 49% of production, Reynolds 30%, Kaiser 21%, we are modifying, but not destroying, the configuration of World War II: concentrated producers influence social decisions about how much expansion is necessary, how much is possible, where new plants should be

located, and what the cost-profit structure of the industry should be.

CHARLOTTE MULLER

New Haven, Connecticut



Highway Safety: Motor Truck Regulation. By Hubert R. Gallagher. Chicago: The Council of State Governments, 1950. pp. 184, including appendices. \$3.00.

For three decades the states have grappled with the vexatious problems of highway safety, regulation of highway use, and taxation of motor vehicles. Despite some progress, the results obtained are widely regarded as unsatisfactory. This report to the Governors' Conference on Highway Safety and Motor Truck Regulation takes stock of current situations and makes recommendations concerning state avenues toward additional progress. While conclusions on controversial issues will not satisfy everyone, the attention focused upon key problems in highway management was not misplaced.

Many useful tables of current facts showing state variations in traffic fatality rates, motor vehicle regulations and organization, driver-license fees and enforcement practices, highway mileages and registrations, and highway user and other motor vehicle fees are presented. The Report summarizes, and indicates the extent of adoption of the Uniform Vehicle Code and the "Maximum Dimensions, Weights and Speeds of Motor Vehicles" recommended by the American Association of State Highway Officials. A particularly valuable section treats problems of traffic courts and structural and administrative changes which can improve public respect for those courts and the rendering of justice.

Every chapter states the problem briefly, reviews relevant data, and makes recommendations. Few specialists will quarrel with the recommendations to promote greater safety. Nor will they dissent from the emphasis upon postwar problems of financing adequate highways to accommodate peak registrations and traffic, or from the strong endorsement of state highway needs and financing studies. However, the statement that "a large part of the responsibility for the rapid deterioration of our major highways clearly rests with the owners and operators of

trucks and vans that exceed an 18,000 pound axle weight . . ." will raise the ire of long-distance truckers who may point out that several eastern states permit higher axle loads and that quotation of opinions of numerous state officials does not constitute conclusive findings of fact. Unfortunately, the engineering facts regarding cost responsibility for highways are not clear. Thus, the Report logically supports test roads to develop those facts and the prudent strategy of holding to existing legal axle loads meanwhile.

The issues in highway safety, use of highways and user fees will more certainly be resolved to public advantage if the Council of State Governments continues to supply the governors and state legislators with up-to-date facts and models.

JAMES C. NELSON

Washington State College



Highway Finance. By Herbert D. Simpson. Columbus, Ohio: F. J. Heer Printing Company, 1951. pp. 169.

This study of highway finance is based on fiscal, engineering, and administrative considerations. It recommends a 20-year program of highway construction, the rate of completion subject to legislative review in the light of changing conditions. This program is related to forecasts of population growth. Motor taxes should be levied as nearly as possible in proportion to the cost of providing highway facilities for the various types of motor vehicle. Costs are computed in terms of ton-miles, and ton-mile cost of 2.04 mills is indicated. It is estimated that the motorist is responsible for 82% of the total program cost. The program recommends a 5-cent gasoline tax, and a 7½-cent diesel fuel tax, a license passenger fee of \$10.00, and a commercial vehicle license fee. It would apportion 51.2% of the total motor revenue to the state highway department, 30.2% to counties, 4.3% to townships, and 14.3% to municipalities. Arbitrary specifications of the relative amounts to be spent for construction and maintenance should be eliminated.

These recommendations are the result of historical, statistical, engineering, and theoretical research. Statistical data are emphasized. The author is objective in his approach, and is careful to point out the diffi-

culties and limitations of his own methods. The reviewer would recommend the book for economists, finance officials, highway engineers, and others who are concerned with attempts to apply social science.

Fiscal theory in the book is brief and less satisfying. There are some theoretical excursions which, if carried out, might lead to interesting conclusions. There are brief discussions of the incidence of the gasoline tax, of the regressiveness of motor fuel taxes, and of the possibility of bond financing in place of taxation. A fuller treatment of these topics is apparently outside the scope of the book.

HARVEY W. PECK

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and University of Texas*



Agricultural Progress in the Cotton Belt Since 1920.

By John Leonard Fulmer. Chapel Hill: The University of North Carolina Press, 1950. pp. xiv, 236. \$3.50.

This book is an outgrowth of the author's course work and incidental research at the School of Rural Social Economics of the University of Virginia and is based to a large extent on data from the U.S. Census, the U.S. Department of Agriculture and the state agricultural experiment stations. In general, it tells a factual or statistical story of what has taken place in ten southern states known as the Cotton Belt.

The first chapter deals with the trends in most agricultural enterprises, farm practices, farm population, and with shifts in gross income and cash receipts in the Cotton Belt and in chapter two the author traces the changes of the same topics in regions within the Cotton Belt. In the chapter following, Dr. Fulmer discusses the changes in farm organization, particularly the size of farm, cropland use, number of livestock per farm and per 100 acres of crop land harvested, and the change in livestock relative to the rest of the nation. Chapter IV on mechanization records the shifts in labor requirements, use of tractor power, and the effect of mechanization and other technological changes on tenancy, and in the following chapter the story of the development of the modern cotton picker.

The chapter on urbanization and agriculture points out the factors influencing the growth of urban population and its

effect on agriculture. In the next chapter, Dr. Fulmer discusses four more dynamic forces, namely, the introduction of farm machinery, change in type of farms, displacement of men and workstock, and the effect of the conservation program on farming patterns. In the chapter on income shifts, it was noted that per capita cash farm receipts have improved in the ten cotton states but less rapidly than rest of the states. It was further noted that non-agricultural aspects of the southern economy have progressed more rapidly and more favorably in recent years than the agricultural sector. In the summary and conclusions chapter, the author presented comprehensive list of factors influencing progress and also a very fine list of pertinent considerations necessary for further agricultural progress in the Cotton Belt.

The author includes 21 tables as a statistical appendix and a selected bibliography which will serve, together with the discussion, as a very valuable reference on the shifts in patterns of the southern economy.

JOHN C. REDMAN

University of Kentucky



Taxation and the American Economy. By William H. Anderson. New York: Prentice-Hall, Inc., 1951. pp. 598. \$6.00.

Emphasizing the legal and administrative aspects of the major taxes in our economy, this book gives the reader a well-grounded understanding of the institutional framework of taxation. The book is factual, descriptive, and informative rather than analytical. Professor Anderson's treatment of the legal and administrative aspects of the major taxes in our economy is excellent. The emphasis on the legal setting of taxation in many instances enhances the clarity of presentation but in the chapter on the constitutional aspects of taxation one gets lost in a maze of cases.

The chapters on inheritance and personal income taxation are of the best in general taxation texts. The discussion of the theory, administration, and problems is informative and suggestive. Some of the most difficult phases of administration are presented simply, clearly, and accurately. The legal intricacies of various types of gifts, life-estate-remainder-

man sequence, powers of appointment, and trusts are presented so a person without legal training can readily understand them.

The chapter on the taxation of corporations falls short of the excellence of the discussion of the other taxes. The treatment of the corporation income tax is cursory, giving no attention to alternative solutions of the problems of double taxation or to the proposals of accelerated depreciation, etc. The appraisal of excess profits taxes is also superficial.

For the beginning student of tax problems, the treatment of the other basic taxes is orthodox and satisfactory as to clarity and accuracy. The refined theory of taxation is neglected, however. For example, in his treatment of shifting and incidence, the author ignores the modern marginal and break-even analyses and only one paragraph is devoted to shifting under monopolistic competition. For a serious student of taxation this treatment of the problems of shifting and incidence falls short of adequacy. Further, little attention is paid to the effect of the different taxes on income, consumption, investment, etc. These factors are essential in weighing the relative merits of different taxes in our system.

The title of the book is somewhat misleading. Only the last five chapters are devoted to the effects of taxation on the functioning of the economic system and this treatment is desultory. Conclusions are drawn without presenting sufficient background material and hence many appear arbitrary. Many statements are made as truths which in the field of public finance are still debatable.

Professor Anderson should be congratulated for producing an interesting, readable, and worthwhile book. It accomplishes the purpose of providing material for a full-fledged, semester course in taxation. There are few current texts which give the beginning student or average citizen as clear, objective and comprehensive a picture of the institutional, legal, and administrative setting of the basic taxes in the American economy.

GEORGE W. THATCHER

Miami University,
Oxford, Ohio



Levee Districts and Levee Building in Mississippi.
By Robert W. Harrison. Stoneville,

Mississippi: Delta Branch Experiment Station, 1951. pp. 254. \$2.00.

Levees have furnished a romantic background for novels and other sorts of books about the South, but they assume a considerably more substantial role in Mr. Harrison's work. This is a very business-like and thoroughly-documented report. It is addressed, in the main, to people who live behind the levee line which extends from Memphis to Vicksburg—people whose well-being is most intimately connected with the functioning of that levee system. In a very real sense this book presents a case history of the social process which has led to the present functioning of the federal government in matters of resource development. As such, the book should find an interested audience among thoughtful students of public affairs, even though their livelihood has a different geographic setting.

The Mississippi drains more than forty percent of the land area of the United States. The run-off from this tremendous watershed has descended in flood-producing volumes on the lower valley with a frequency which has averaged once each 2.8 years. The channel of the lower Mississippi can accommodate a flow of about one million cubic feet per second, but during high water the discharge frequently reaches two million or more cfs. Without levees, this excess would be temporarily stored in the wide flood plain, and would inundate up to 35,000 square miles of potentially productive land. Levees, of course, constrict this hydrologic arrangement; and the larger the area that is withdrawn from the floodway, the higher the levee system must be built. This over-simplified proposition might have its counterpart in an equally simple formulation of the economic problem relating to optimum flood protection if one could "begin from scratch." But the problem becomes fantastically complex in considering the piece-meal genesis of the present rather comprehensive program for protecting the lower Mississippi valley.

Although the report deals mostly with levee building in the state of Mississippi, the reader will quickly appreciate that this is a helpful concession to keeping the report within manageable proportions. It is organized as a chronological account of a succession of levee-building programs, and of floods which defeated those programs only to generate new and larger efforts. The

material is grouped under twenty-nine major headings, an arrangement which enabled the author to maintain his chronological course while preserving a remarkable continuity in relating the evolution of different concepts as to suitable administrative arrangements and the engineering of levee building.

Levee-building along the Mississippi dates back to the founding of New Orleans in 1717, but until about 1845 the matter was considered almost entirely the responsibility of river-front landholders. Recognition that the problem exceeded the abilities of the front holders emerged after a particularly devastating flood in 1844, and in the form of state legislation enabling counties to construct levees and assess taxes against all landholders who were benefited. This was followed shortly by direct state intervention in the operation and financing of county levee boards. Agricultural development was booming at the onset of the Civil War, but problems of financing levee work were also growing. These financing problems, which Harrison partially identifies with the reluctance of non-resident owners to pay levee taxes, became unmanageable when all levee taxes were set aside for the duration of the War. By the conclusion of the War, a combination of neglected repairs, the mining of the levee by Union forces, and two severe floods had wiped out about all that had been accomplished in the way of flood protection and the economic development of the area.

Reconstruction following the Civil War was retarded by vexing problems, some of which grew out of the defaulted prewar levee financing programs, but by 1890 optimism was reviving. State responsibility for levee work was generally acknowledged and in fact was an obviously practical solution to the urgent problem of restoring much of the Delta to a tax-paying status. County levee districts were all liquidated and there was a strong public demand for a state-operated general levee system, although this was never quite attained. Two large districts were formed which together encompass the entire Delta of Mississippi, and these two districts have continued to function as separate units.

Federal participation in the affairs of the Districts began in 1882, but only by providing assistance with funds appropriated for improvement of the navigation channel. Not until 1917 did the Congress drop the ruse that levees were built only for purposes of

channel improvement, and in that year funds were appropriated specifically for flood control. A comprehensive federal flood-control program for the lower Mississippi was created by the Jones-Reid Bill of 1928 and progress under the provisions of that bill has been decisive.

Mr. Harrison has not attempted to formulate any specific principles or to test any particular hypothesis regarding the role of government in dealing with problems of resource development. Instead he has performed a substantial service for those who are concerned with evaluating such public expenditures by simply providing them with an amazingly comprehensive account of the governmental processes by which one of the world's largest and most complicated flood control systems has come about.

The book is recommended reading, and particularly for economists who are complacent toward a rigid application of cost-benefit comparisons as the appropriate modus operandi for evaluating public works proposals.

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Regionalism in America. Edited by Merrill Jensen with a Foreword by Felix Frankfurter. Madison: The University of Wisconsin Press. 1951. Pp. xvi, 425. \$6.50.

To summarize adequately the topics of the fifteen essays and five editorial comments that make up this volume is difficult. These materials touch on the experience of regionalism in the South, the Southwest, and the Northwest. Reflections of regional characteristics in literature, painting, architecture, and language are pictured in four essays. Regionalism as a practical force, particularly in planning and public administration, is described in three essays dealing with the Tennessee Valley, the Great Lakes cutover region, and the Great Plains-Missouri Valley region. And in addition to the descriptive analyses, the first three and the last two essays in this volume treat of the history and use of regionalism as a conceptual tool for practitioner and social analyst. Ten of the essays offer, too, valuable bibliographic notes.

"Region" and "regionalism" are difficult terms. This volume was not intended to

"arrive at any common definition of a region, or even to agree upon a set of criteria by which a region could be described." (p. vii) One of its principal values derives instead from its helpfulness in searching out some of the characteristics of a microcosm fitted for study. The region is a fact, whether regarded as a geographically distinct area, as a cultural unit distinguishable in various ways from other units, or as a community of people held together by interrelated functions or shared ideals. How this fact can serve to make the data of social investigation more manageable finds demonstration in these reports on a variety of scholarly studies of particular regions and of single regional characteristics.

But it is from the history and use of the regional concept that the reader can gain a second major value from this volume. As a tool of research, regionalism keeps before the investigator a constant warning against mistaking as universal what is in fact particular. Regionalism, by the very looseness of the underlying definition of a region, corrects premature generalizations. These essays underscore how, in Odum's phrase, the student of a region chooses not "regionalism *or* but regionalism *and*" as his orientation. Despite the pertinence of Wirth's, Odum's, and Vance's observations on the limitations of regionalism, the highest promise of regionalism as a framework of research appears in Vance's suggested "use of regionalism as the areal-cultural frame of reference for the comparative study of society." (p. 135) Regionalism holds this promise chiefly by breaking down some of the barriers that separate specialists and enabling them to combine their efforts by joint study of a limited area embracing a concrete society.

The uses of regionalism by practitioners suggest likewise a pulling together of activities of many specialists in the interest of more nearly whole decisions. It is the record of this kind of experience presented in this volume that encourages the invention of social arrangements suited to the needs of our times.

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Local Trucking. By L. W. Mason, assisted by H. L. Grubbs and P. E. Green. McGraw-Hill Book Company, New York, 1951. 331 pages, Appendix of Exhibits, Bibliography, and Index. \$6.50.

This volume is a handbook written by a local truckman and his associates about local trucking, and for local truckers. The plan of the book is simple, its language is plain and simple and its purpose is evident. It is intended to present the results of many years of experience in the local trucking business, literally from the horse and wagon days to the present automotive equipment. It reminds one of the ripened advice which a seasoned veteran of the local trucking wars would give to a beginner in the field to their mutual benefit.

The volume treats of every aspect of local trucking including types of operations, selection of location of the business, financing the business, selection of vehicles, operating practices, maintenances, employee selection and relations, traffic, rates, accounting depreciation, insurance and managerial control. It is no philosophic treatment of trucking but a practical guide as to how to operate a local cartage or trucking enterprise.

The collaborators commence most of their discussions with definitions and usually resolve any doubt as to whether or not the reader is aware of or understands background materials by stating them. The discussion is interlarded with hard-headed common sense and a piquant sense of humor.

It is not a book to be read at one sitting or at several protracted sittings, nor a volume to be taken with one on a vacation. It is, however, a volume which every local trucking company executive or employee should keep in his office book-shelf for consultation and reference. This is the purpose for which the volume was compiled, to share experience with those interested in this field of motor transportation.

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